

Digitized by the Internet Archive
in 2010 with funding from
University of Toronto

THE SOUTHERN MEDICAL JOURNAL

EDITORIAL STAFF

J. A. Witherspoon, M.D., Editor-in-chief
 W. D. Haggard, M.D., Associate Editor
 W. A. Bryan, M.D., and J. M. King, M.D., Managing Editors

A. B. Cooke, M.D.	L. E. Burch, M.D.	M. M. Cullom, M.D.	Geo. H. Price, M.D.
Wm. Litterer, M.D.	S. S. Crockett, M.D.	Hilliard Wood, M.D.	Perry Bromberg, M.D.
Duncan Eve, M.D.	O. H. Wilson, M.D.		Geo. C. Trawick, M.D.

COLLABORATORS

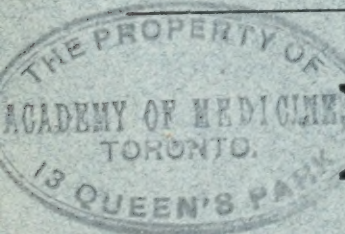
L. S. McMurtry, M.D. Louisville, Ky.	Rudolph Matas, M.D. New Orleans, La.
Jno. G. Cecil, M.D. Louisville, Ky.	F. W. Parham, M.D. New Orleans, La.
J. B. Marvin, M.D. Louisville, Ky.	C. Jeff. Miller, M.D. New Orleans, La.
Jos. McD. Mathews, M.D. Louisville, Ky.	Oscar Dowling, M.D. Shreveport, La.
Floyd W. McRae, M.D. Atlanta, Ga.	J. D. S. Davis, M.D. Birmingham, Ala.
Geo. H. Noble, M.D. Atlanta, Ga.	L. C. Morris, M.D. Birmingham, Ala.
F. P. Calhoun, M.D. Atlanta, Ga.	Seale Harris, M.D. Mobile, Ala.
Eugene R. Corson, M.D. Savannah, Ga.	H. T. Inge, M.D. Mobile, Ala.
T. D. Coleman, M.D. Augusta, Ga.	L. L. Hill, M.D. Montgomery, Ala.
Geo. Ben Johnston, M.D. Richmond, Va.	W. W. Crawford, M.D. Hattiesburg, Miss.
C. Tompkins, M.D. Richmond, Va.	Jas. B. Bullitt, M.D. Oxford, Miss.
Stuart McGuire, M.D. Richmond, Va.	Chas. L. Minor, M.D. Asheville, N. C.
Wm. Krauss, M.D. Memphis, Tenn.	Jno. W. Long, M.D. Greensboro, N. C.
Heber Jones, M.D. Memphis, Tenn.	H. A. Royster, M.D. Raleigh, N. C.
J. A. Crisler, M.D. Memphis, Tenn.	Manning Simons, M.D. Charleston, S. C.
Battle Malone, M.D. Memphis, Tenn.	Le Grand Guerry, M.D. Columbia, S. C.
W. B. Rogers, M.D. Memphis, Tenn.	Chas. M. Rosser, M.D. Dallas, Tex.
B. F. Turner, M.D. Memphis, Tenn.	Bacon Saunders, M.D., M.D. Ft. Worth, Tex.
Benj. D. Bosworth, M.D. Knoxville, Tenn.	Wm. V. Laws, M.D. Hot Springs, Ark.
C. Heltzclaw, M.D. Chattanooga, Tenn.	G. R. Holden, M.D. Jacksonville, Fla.
	A. E. Thayer M.D. Jacksonville, Fla.

EDITORIAL OFFICES: 150 FOURTH AVENUE, NORTH
 Published Monthly at Nashville, Tenn.

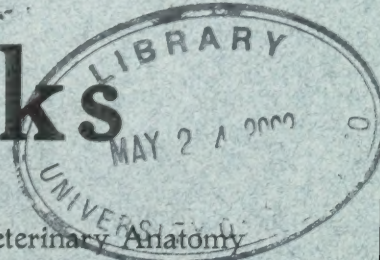
PRICE \$2.00 PER ANNUM

SINGLE NUMBERS 25 CENTS

Entered as Second Class Matter, July 8, 1908, at the Postoffice at Nashville, Tenn., under the Act of March 3, 1879. Copyrighted by the Publishers, 1908.



New Books



Mumford's The Practice of Surgery

Sisson's Veterinary Anatomy

Tousey's Medical Electricity and X-Ray

Crandon's Surgical After-Treatment

W. B. SAUNDERS COMPANY

SEE PAGE 5

The City View Sanitarium

SEPARATE BUILDINGS FOR MEN AND WOMEN.

NASHVILLE, TENN.

A licensed ethical private institution for the treatment of Mental and Nervous Diseases, and a selected class of Alcoholic and Drug addictions. Commodious, well arranged, and thoroughly equipped buildings. Women's department just completed, fireproof throughout. Home-like surroundings a special feature. Specially trained nurses. Two resident physicians. Capacity 50.

Consultants—Dr. Duncan Eve, Dr. Wm. G. Ewing, Dr. J. A. Witherspoon, Dr. Paul F. Eve, Dr. S. S. Crockett, Dr. L. B. Graddy, Dr. W. W. Core.

JOHN W. STEVENS, M.D., Physician-in-Charge.

Phone Main 2928

NASHVILLE, TENN.

Rural Route No. 1

TULANE

UNIVERSITY

OF

LOUISIANA

MEDICAL DEPARTMENT (Undergraduate) 76th Annual Session opens October 1, 1910. Four years' course; unexcelled laboratory and clinical facilities. Dormitory for medical students in first two years. Over 70 teachers.

OPPORTUNITIES FOR CLINICAL INSTRUCTION UNSURPASSED BY ANY MEDICAL COLLEGE IN THE UNITED STATES.

Fees average about \$150 per session.

DEPARTMENT OF PHARMACY Established in 1838. Two graded course of 32 weeks for degree of Ph.C. Food and drug analysis for students prepared. Women admitted on same terms as men.

For Catalogs, address **DR. ISADORE DYER, Dean,**
P. O. Drawer 261. New Orleans, La.

CURRAN POPE

A. THRUSTON POPE



A MODERN up-to-date private infirmary equipped with steam heat, electric light, electric fans, modern plumbing and new furnishings. Solicits all chronic cases, functional and organic nervous diseases, diseases of the stomach and intestines, rheumatism, gout and uric acid troubles, drug habits and non-surgical diseases of men and women. No insanity or infectious cases treated. Bed-ridden cases not received without previous arrangement.

Hydrotherapy, Mechanical Massage, Static, Galvanic, Faradic, High Frequency, Arc Light and X-Ray Treatments given by competent Physicians and Nurses under the immediate supervision of the Medical Superintendent. Special laboratory facilities for diagnosis by urine, blood, sputum, gastric juice and X-Ray. Recreation hall with pool and billiards for free use of patients.

Rates \$25 per week; including treatment, board, medical attention and general nursing. Send for large illustrated catalog. The Sanatorium is supplied daily, from the Pope Farm, with vegetables, poultry and eggs; also milk, cream, butter and buttermilk from its herd of registered Jerseys.

THE POPE SANATORIUM

INCORPORATED
Established 1890

115 West Chestnut Street
LOUISVILLE, KENTUCKY

Long Distance Phones

CUMB. M. 2122 HOME 2122



DAVIS INFIRMARY, For Diseases of Women and Surgical Cases and Hospital Training School for Nurses. The buildings are well work, and especially for abdominal cases. The annex and other improvements recently made provide increased facilities and complete equipment.

Competent Staff of Consultants and Assistants—Neurologist, Internist, Ophthalmologist, Cystoscopist, Radiologist, Pathologist
Ambulance Service. **J. D. S. DAVIS, M.D., Birmingham, Alabama.**

TABLE OF CONTENTS

Program of Southern Medical Association.....	577
ORIGINAL ARTICLES.	
1. Observations on the Surgery of Tetanus. By <i>G. Wiley Broome, M.D.</i> , St. Louis Mo.....	580
2. Address at Opening of Jefferson Medical College, Philadelphia, Pa. By <i>Dr. G. C. Savage</i> , Nashville, Tenn.	584
3. Preparation Required for the Practice of General Surgery. By <i>Dr. G. W. Green</i> , Chicago, Ill. . .	589
4. Treatment of Advanced Cases of Appendicitis, With Intestinal Paresis. By <i>Dr. J. N. Lewis</i> , Roanoke, Va.	592
5. Capsule Cataract Operation, With Report of Case. By <i>Dr. J. P. Crawford</i> , Nashville, Tenn.	594
6. Intubation in Desperate Cases. By <i>O. H. Wilson, M.D.</i> , Nashville, Tenn.	598
7. Tubal or Extra-Uterine Pregnancy. By <i>J. Hugh Carter</i> , Memphis, Tenn.	599
8. The Best Methods for the Control of Fever. Recommendation of Rectal Irrigation. By <i>William Lee Secor, M.D.</i> , St. Petersburg, Fla.....	601
TRANSLATION.	
The Treatment of Syphilis With Ehrlich's Diamido-Arsenobenzol (Preparation 606). By <i>Dr. W. Wechselmann</i> , Berlin, Germany. Translated by <i>Dr. Wm. Litterer</i> from the <i>Dermst. Ztscher</i> , Berlin	604
EDITORIAL.	
Why Not Take Another Step in the Prevention of Typhoid Fever?	611
"Doctor" Crippen a Quack	612
Students' Home-Coming During Southern Medical Association	613
BOOK REVIEWS.	
A Treatise on Diseases of the Eye.....	613
Some Points in the Surgical Anatomy of the Temporal Bone	614

BEECHHURST SANITARIUM

LOUISVILLE, KENTUCKY



A thoroughly modern and well equipped psychopathic hospital for the treatment of nervous and mental diseases, drug addictions and alcoholism. Ample buildings. Detached apartments for special cases. Twenty-five acres of wooded lawn. High and retired.

H. H. YEAMAN, M.D.,
Superintendent.

(Late Supt. Central Ky. Asylum)

H. B. SCOTT, A.M.M.D.,
Asst. Physician.

Long Distance Phones:
Cumberland, E. 257a
Home, 3555

St. Luke's Hospital

Dr. Stuart McGuire's Private Sanatorium

RICHMOND, VA.



Owned and personally conducted by Dr. Stuart McGuire for the exclusive use of his private patients.

Building erected for the purpose to which it is devoted, and combines the comforts of a home with the conveniences of a modern hospital.

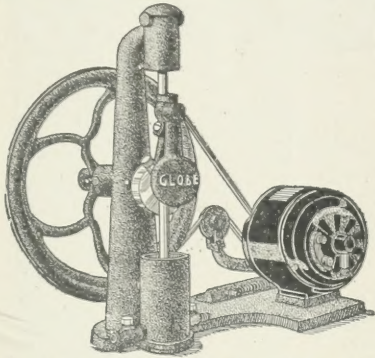
Located in residential section, convenient to all part of the city by means of the street car service.

Capacity for sixty patients. Single and double bedrooms, with or without bath. No wards.

Designed for surgical and gynecological cases. No contagious diseases, insane or colored patients received.

Cost of board and nursing and other information may be obtained by addressing the Secretary.

The Globe Spells Practice

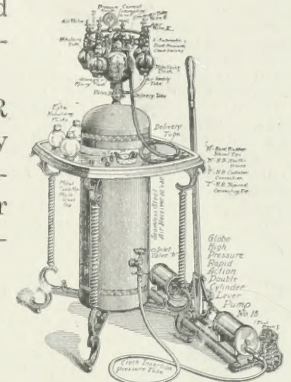


Globe Electric Air Pump No. 19
also, by the way, for your automobile.

GLOBE NEBULIZERS represent a complete system of rational treatment for Ear, Nose, Throat and Lungs.

GLOBE COMPREST AIR VIBRATORS are a part of this system, and make Vapor Vibration possible.

GLOBE ELECTRIC AIR PUMPS are the very acme of apparatus for satisfactory air supply—for any therapeutic purpose—



Globe Nebulizer Outfit
No. 55189

We make the prices right. Illustrated Catalog free.
Equip now, for the season is here.

GLOBE MANUFACTURING CO
DEPT. S. BATTLE CREEK, MICH.

TABLE OF CONTENTS — Continued

BOOK REVIEWS.

American Red Cross Abridged Text-Book on "First Aid"	615
Duodenal Ulcer	615
Manual of Tropical Medicine	616
Books Received	617

ABSTRACTS OF CURRENT LITERATURE.

The Cultivation of the Tubercle Bacilli	617
Bacterial Vaccines	618
Antityphoid Inoculations	622
Ehrlich's "606" in Syphilis	622
Bacteriology of Acute Respiratory Infections in Children	623
Test for Gastric Cancer	626
Poliomyelitis	627
Tuberculosis in Milk	627
Yonkerman's "Tuberculozine"	628
Fruitola	628
Fracture and Dislocation of Shoulder	628
Vertigo	629
Systemic and Oral Conditions	630
Alveolar Abscess	630
Management of the Breast in the Puerperium and During Lactation	630
A Study of Mistaken Diagnosis	631
Treatment of Poliomyelitis From a Neurologist's Point of View	633
Orthopedic Treatment of Acute Poliomyelitis	634
The Teaching of Surgery	635
The Rainey-Atkins Tragedy	635
Railroad Tuberculosis Exhibit	636
Arsenic Treatment of Syphilis	636
Myocarditis	636
Treatment of Acute Stage of Poliomyelitis	636
Publishers Department	639

Weis

"COMPLETE OFFICE ON LEGS"

THE FILES YOU NEED AT YOUR FINGERS' ENDS

The Most Practical
Desk for Your
Office

This handsome Flat Top Desk is supplied with any combination of nine kinds of filing drawers. These are made for filing letters, Index Cards, Folded Documents, Catalogs and shallow drawers suitable for samples, instruments, etc.

Physicians usually require a file for a card index, patients' record, card ledger or other data. Their correspondence also should be kept at their fingers' ends. This and many other practical features are embodied in this handsome desk.

The pattern shown above is equipped with a drawer for 4,500 3x4 index cards, a vertical file for 5,000 letters, two small and large storage drawers with plain solid bottoms. Also two extension slide shelves.

Made in Solid Oak, finished either golden or weathered and equipped with any combination of the nine kinds of drawers at price quoted above. Birch Mahogany, \$24.50, delivered. Freight paid east of Mont., Wyo., Colo., Okla. and Texas.

In and West of these States add 15 per cent.
Write for catalog "C," our compendium of information on "Space Economizers"—filing cabinets, card indexes, etc. Catalog "B" shows sectional bookcases in all popular finishes and designs. (Both free.)



No. 555

Pat. App
For

\$22⁰⁰

Delivered

SOLID OAK—SANITARY—HANDSOME

The *Weis* Mfg. Co.

160 Union Street, MONROE, MICHIGAN

Dr. Moody's Sanitarium, San Antonio, Texas, For Nervous and Mental Diseases,

Drug and Alcohol Addictions. Four modern building and two detached cottages, with ample provision for proper classification, and with equipments and conveniences for genial home environments, comforts, and for rational scientific treatment, which is strictly along ethical lines. Location and locality ideal for health, rest and recuperation. Rooms may be had in suite, or with private bath. Seven acres of beautiful lawn and shade. Surrounded by several hundred acres of City Parks and by New Government Post Grounds. Address, G. H. MOODY, M.D., 315 Brackenridge Avenue. (Formerly Assistant Physician to State Asylums at Austin and San Antonio, Texas.)

J. I. Enlew, M. D.

ENLEW BUILDING

Jackson, Miss.

E. C. FELLOWS

PHYSICIAN

BATON ROUGE, LA.

A DOCTOR'S STATIONERY

Is never dignified and attractive unless he has the right kind of printer do the work. Printed work, as we design and execute it, is neat and handsome, while our genuine steel die embossing, at a little higher price, simply cannot be surpassed. We will be glad to send you samples and quote prices. Write us.

Brandon Printing Co.

NASHVILLE, TENN.

New Books

Sisson's Veterinary Anatomy

This work is a clear and concise statement of the essential facts regarding the structure of the principal domesticated animals, containing many hitherto unpublished data resulting from the detailed study of formalin-hardened subjects and frozen sections. A large percentage of the illustrations are original, many being in colors. The terminology used has been carefully revised with reference to the B. N. A. and the nomenclature adopted by European anatomists. To anyone interested in veterinary and comparative anatomy this book is indispensable.

Octavo of 826 pages, with 588 illustrations, many original and many in colors. By SEPTIMUS SISSON, S. B., V. S., Professor of Comparative Anatomy in Ohio State University. Cloth, \$7.00 net; Half Morocco, \$8.50 net.

Mumford's The Practice of Surgery

This is truly a *clinical* surgery—surgery as it is practiced at the bedside, in the accident ward, in the operating room. It is the outgrowth of twenty years of active hospital and private surgical practice, together with the experience gained from clinical teaching, class-room discussion and lectures. Only one operation is given for each condition, and that the one the author's personal experience has convinced him is the best. The illustrations are wonderfully practical.

Octavo of 1015 pages, with 682 illustrations. By JAMES G. MUMFORD, M.D., Instructor in Surgery, Harvard Medical School. Cloth, \$7.00 net; Half Morocco, \$8.50 net.

Tousey's Medical Electricity and X-Ray

This book contains everything you might wish to know about electricity and radiotherapy. It answers all questions; it meets all needs. Everything is explained; nothing is omitted. *Therapeutic Gazette* says: "Dr. Tousey's work may be said to contain practically everything in regard to medical electricity, and by everything we mean not only a discussion of elementary facts, but a description of all the forms which can be employed." No other book is just like it.

Octavo of 1116 pages, with 750 illustrations, 16 in colors. By SINCLAIR TOUSEY, M.D., Consulting Surgeon to St. Bartholomew's Clinic, New York City. Cloth, \$7.00 net; Half Morocco, \$8.50 net.

Crandon's Surgical After-Treatment

Dr. Crandon's work takes up every problem and emergency that may arise from recovery-room to discharge. The reader is not referred to other books for details, but all necessary information is given in this book, concisely, plainly and definitely stated. A special feature is the very full exposition of *Vaccine Therapy, Immunization by Inoculation and Specific Sera*, written by Dr. George P. Sanborn, a leading disciple of Sir A. E. Wright.

Octavo of 803 pages, with 265 illustrations. By L. R. G. CRANDON, M.D., Assistant in Surgery, Harvard Medical School. Cloth, \$6.00 net; Half Morocco, \$7.50 net.

W. B. SAUNDERS COMPANY

London: 9 Henrietta Street, Covent Garden

925 Walnut Street, Philadelphia

Australian Agency: 430 Bourke Street, Melbourne

ELEVENTH EDITION

POLK'S MEDICAL REGISTER AND DIRECTORY OF NORTH AMERICA

NOW BEING REVISED

PUBLISHED AT REGULAR INTERVALS SINCE 1886. Compiled from original and official sources.

Names and addresses with college information of more than 150,000 physicians without reference to school practiced.

Digest of the Laws of each State and Province Governing the Practice of Medicine.

Lists of Hospitals and Sanitariums, etc.

Lists of all Medical Colleges, whether active or extinct.

The Eleventh Revised Edition will soon go to press, and every physician on the Continent who has not already done so, should furnish the publishers his name, address, college and year of graduation, to ensure correct representation in the new 1910 edition.

Descriptive matter promptly furnished upon application to the Publishers.

R. L. POLK & CO.

DETROIT

=

=

=

=

=

=

=

MICHIGAN

Atlanta College of Physicians and Surgeons ATLANTA - GEORGIA

Consolidation in 1898 of the Atlanta Medical and Southern Medical Colleges.

FACULTY.

J. S. Todd, M.D., Emeritus.

A. W. Calhoun, M.D., LL.D.

W. A. Selman, B.S., M.D.

Wm. Perrin Nicolson, M.D., First V.-Pres.

W. S. Elkin, A.B., M.D., Dean.

W. F. Westmoreland, M.D., President.

F. W. McRae, M.D.

J. Clarence Johnson, M.D.

H. F. Harris, Ph.D., M.D.

W. S. Goldsmith, M.D.

Jas. B. Baird, M.D.

E. Bates Block, M.D.

Marion McH. Hull, M.D.

Chas. E. Boynton, A.B., M.D.

A. L. Fowler, M. D.

S. T. Barnett, A.B., M.D., Treasurer.

T. C. Davison, M.D.

Stewart R. Roberts, A.B., M.Sc., M.D.

Dunbar Roy, A.B., M.D.

John G. Earnest, M.D.

Bernard Wolff, M.D.

Michael Hoke, A.B., M.D.

J. C. Olmsted, M.D.

C. W. Strickler, M.D., Second V.-Pres.

F. Phinizy Calhoun, A.B., M.D.

Laurence Everhart, Secretary.

The fifty-sixth annual session of the Atlanta College of Physicians and Surgeons begins Wednesday, September 21, 1910.

With a group of five college buildings, arranged upon the modern university plan, and a corps of over fifty professors and instructors, this institution stands second to no medical college in the country. The laboratory facilities are unsurpassed and the amount of clinical material is abundant, between 25,000 and 30,000 patients having been treated the past year in the outdoor department.

Last year surpassed any previous one as to number of students matriculated, there being 334. Owing to our large and well equipped laboratories, we can handle a large number of students easily.

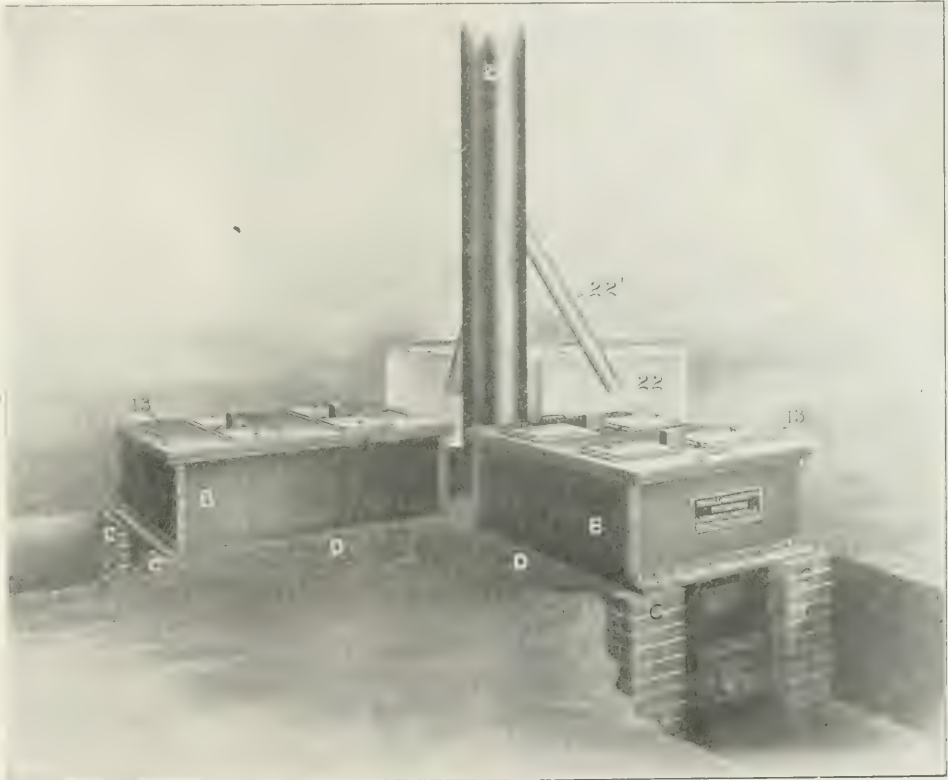
A four years' course of seven months each is required, the last year of which is devoted largely to clinical and practical work. The minimum educational requirements are those of the Southern Medical College Association, of which we are a member. The tuition fees are \$100 per session, and there are no extras. Board can be obtained at from \$15 to \$25 per month.

For catalogue and further information address

DR. WM. S. ELKIN, Dean, Atlanta College of Physicians and Surgeons, Atlanta, Ga.

Have You Investigated The McCall Incinerator

for use in hospitals, asylums, camps, schools and similar institutions where the disposal of waste, excreta, etc., is a problem. This machine is very simple, is easily manipulated, and is very inexpensive in operation. It insures perfect sanitation, the absolute prevention of the dissemination of infectious diseases through waste products. Sanitary engineers everywhere are agreed that it is the most satisfactory aid to sanitation now in existence.



THE NEW YORK CITY BOARD OF HEALTH has adopted the McCall Incinerator where absolute sanitation is desired.

THE UNITED STATES ARMY has officially adopted this machine as a part of camp equipment.

Send For Descriptive Booklet

McCall Incinerator Company of North America
NASHVILLE, TENNESSEE

DR. BOARD'S SANATORIUM

LOUISVILLE, KENTUCKY

A quiet, homelike institution for the treatment of mental and nervous diseases, drug and liquor habits. Conveniently located on Sixth Street just opposite Central Park. Grounds shady and attractive, building a model private hospital, treatment as applicable to each individual patient; nursing intelligent and tactful.

Terms: 20 to 35 dollars per week, special rates to physicians, ministers and chronic cases.

References: The medical profession of Kentucky.

DR. MILTON BOARD, 1412 Sixth St., Louisville, Ky.

BENNETT MEDICAL COLLEGE

Regular, fully recognized. Summer Semester begins June 1; ends September 21. Full course: Lectures, Quizzes, Laboratories, Summer Clinics. Employment secured for worthy students outside of class hours to aid in defraying expenses.

WILLIAM F. WAUGH, A M., M.D., Dean, 1360 Fulton St., Chicago, Ill.

UNIVERSITY OF VIRGINIA

Medical Department - Charlottesville, Va.

The Entrance Requirements are the completion of a four-year high school course, and, in addition, a year of recognized college work in Chemistry, Biology, and either Physics, German or French.

The Prominent Features of the course are extensive laboratory instruction in the fundamental medical sciences, and thorough practical training in the University Hospital, where students have many of the advantages usually granted only to internes.

For catalogue address

HOWARD WINSTON, Registrar.



Send on Approval
TO RESPONSIBLE PEOPLE
Laughlin
FOUNTAIN PEN

and
RED GEM
The Ink Pencil

Your Choice of

\$1.00
These Two Popular Articles paid to any address for only

By Insured Mail, 10c EXTRA.

Illustrations are Exact Sizes

Every pen guaranteed full 14 Kt. Solid Gold—cut on right hand may be had in either our standard black opaque pattern, or Non-breakable Transparent, as desired, either in plain or engraved finish, as preferred.

You may try this pen a week, if you do not find it as represented, a letter article than you can secure for those times THIS SPECIAL PRIZE in any other make, if not satisfied, we will refund your money, and you \$1.00 for it.

City on 1917 is our famous and Popular Red Gem Ink Pencil, a complete leak proof triumph, may be carried in any position in pocket or shopping bag, writes at any angle at first touch, and is the most perfect and reliable rubber point polished transparent rubber case, terra cotta finish. Retail everywhere for \$2.50. Agents wanted. Write for terms. Address Laughlin Mfg. Co. Address as above. Don't you forget.

Laughlin Mfg. Co.
605 Majestic Bldg.,
Detroit, Mich.



The DeMoville Surgical Department

Under the Management of an Experienced Instrument Man

We wish to announce to the profession that we are now in position to furnish you anything you may need in the instrument line on short notice. We carry a well assorted stock of instruments, dressings, hospital supplies, elastic stockings, abdominal supports, trusses, crutches, and, in fact, anything in this line. We carry only dependable goods. We are agents for the Kuy-Scheerer Co., Koch & Co., Becton, Dickinson & Co., Randall-Faichney Co., Bausch & Lomb Opt. Co., Victor Electric Co., The Electro Surgical Instrument Co., also other standard makers. We are in a position to furnish bids on hospital supplies and laboratory outfits of any size, and would be pleased to quote prices.

This department is under the supervision of our Mr. Jos. Taylor, who would be pleased to call on you at any time to furnish any information you might desire or to answer any inquiries by mail or phone.

We respectfully invite you to inspect our stock. Make our store headquarters.

Out of town doctors are cordially invited to call on us for any information in person or otherwise.

We furnish graduated nurses any hour of the day or night; also Biological Products.



DeMoville Drug Co.

COR. CHURCH AND CHERRY
NASHVILLE, TENNESSEE

Open Night and Day

Phones: Main 65-66

SOUTHERN MEDICAL JOURNAL

150 FOURTH AVE., NORTH

NASHVILLE, TENNESSEE

EDITORIAL STAFF

J. A. WITHERSPOON, M.D. *Editor in Chief*
W. D. HAGGARD, M.D. *Associate Editor*
W. A. BRYAN, M.D.)
J. M. KING, M. D. . . .) *Managing Editors*

DUNCAN EVE, M.D.
S. S. CROCKETT, M.D.
A. B. COOKE, M.D.
WM. LITTERER, M.D.
O. H. WILSON, M.D.
M. M. CULLOM, M.D.

L. E. BURCH, M.D.
HILLIARD WOOD, M.D.
GEO. H. PRICE, M.D.
PERRY BROMBERG, M.D.
GEO. C. TRAWICK, M.D.

Assisted by forty collaborators and about one hundred regular contributors among the leading physicians of the twelve Southern States.

THE REGULATION OF MANUSCRIPTS

All manuscripts must be type-written on one side of the paper only.

Each issue of the Journal will be copyrighted.

All manuscripts submitted to this Journal will be considered only on the condition that they will not appear in any other journal until after they have been published in this Journal.

It is desired that all articles close with a summary and that the bibliography be given.

Good illustrations are desired; the authors to furnish satisfactory photographs and drawings.

All manuscripts must be in the hands of the editors by the tenth of the month preceding the date of issue in which they are to appear.

All manuscripts must be passed on by the Department Editors, and final action taken by the staff in open session.

The return of manuscripts, photographs and drawings, used or not used, will not be guaranteed, but reasonable care will be taken of them, and when requested will be returned.

All manuscripts and communications should be addressed to the SOUTHERN MEDICAL JOURNAL, No. 150 Fourth Ave., N., Nashville, Tenn.

REPRINTS

Reprints will be furnished at a uniform schedule of price to all, in magazine or octavo size. Prices and full information furnished with galley proof or on request.

AN OPEN LETTER.

TO THE MEDICAL PROFESSION:

It is the one great desire and object of this Journal to render to the profession of the South as much valuable service as it possibly can. The way to accomplish this is through original articles, reports of cases and abstracts.

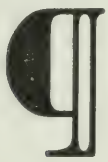
The Journal wishes to emphasize the fact with reference to original articles that it will spare no means on its part to present in the very best form any article it may publish. It will cheerfully prepare plates of illustrations, and really, it urges writers to illustrate articles by photographs or drawings. Illustration clears up the subject matter and renders it of greater value. Southern writers are urged to send their work to this Journal. Much valuable and useful information would be given if unusual and interesting cases were reported.

It, therefore, requests the profession, especially those interested in improving the practice of medicine, to send the Journal original articles on subjects of their own choice and also reports of cases which contain an element of instruction. A wide support of this kind has come from the entire profession of the South, and the Journal solicits such continued support as will insure maintenance of its high standard in medical literature.

Respectfully,

SOUTHERN MEDICAL JOURNAL.

The Doctor's Business Book



The Very Thing You Need to Keep Your Accounts and Records Straight. Carry It in Your Pocket and Save Hundreds of Dollars and Days of Your Time.

WE ALMOST GIVE IT TO YOU!

This book is without a doubt the most complete and at the same time simple and thoroughly efficient account book that has ever been devised. Furthermore, it is absolutely legal and can be presented in any court of justice. It does not make use of any hieroglyphics, but everything is entered in plain language, and anybody can understand it.

The book contains 24 pages of business instructions for physicians, which have been found very useful and correct in a long and varied practice, under the headings of Importance of a due bill, Fees, Billing and Collecting, Cautions, Statute of Limitations, Form for Wills, Dying Declarations, Saving and Investing, Instant Treatment of Poisoning, etc. It also contains an average fee bill which has been found to work out correctly in practice.

The book contains 216 pages for accounts, of which eight pages are devoted to alphabetical index, 146 pages are devoted to regular accounts, 32 pages to short accounts, 24 pages to cash accounts, and 8 pages to birth, death, and vaccination records.

It has the advantage that entries can be made in a fraction of a minute, right upon the spot, thus insuring that none will be omitted on account of procrastination. The book being always in the physician's pocket, it is always up to date, never requiring any posting, and when he meets a debtor on the road who inquires about his account, he can inform him at a moment's notice and thus collect what the debtor has to pay at that time, instead of putting off an answer until some convenient season and thus missing that payment.

This book is so convenient, useful and legal that an eminent Philadelphia judge, who has tried hundreds of cases in which physicians' accounts were involved, has stated that "In the light of my recent examination of the law, I can say that the form of book which you have gotten together is as convenient and accurate as could well be devised."

The book is bound in full leather and contains 240 pages altogether.

THIS BOOK AND A YEAR'S SUBSCRIPTION TO THE SOUTHERN MEDICAL JOURNAL ONLY \$2.50. THE PRICE OF THE JOURNAL ALONE IS \$2.00.

SOUTHERN MEDICAL JOURNAL,
Nashville, Tenn.

I enclosed \$2.50 for a year's subscription and a copy of the Doctor's Business Book, delivered by mail prepaid.

Name

Address

SPECIAL—Send \$4.00 For Two Years' Subscription and We Will Send You the Book Absolutely Free.

OVER 7,000 ALUMNI

UNIVERSITY OF NASHVILLE

(FOUNDED 1850)

— AND THE —

UNIVERSITY OF TENNESSEE

(FOUNDED 1876)

AMALGAMATED AND ENDOWED 1909

NEXT SESSION OPENS SEPT., 1910

E. F. TURNER, REGISTRAR, 631 2nd Ave., S.



The Attleboro Sanitarium

For the summer months, Doctor, there is no better place to send your patients for recuperation than cool, picturesque, historic old New England. There is no better place in New England than the Attleboro Sanitarium. Built and conducted with especial reference to the care and comfort of invalids. Fitted with every scientific appliance for the successful treatment of chronic cases. Hydrotherapy, Electrotherapy, Mechano:herapy, Phototherapy, Massage, Gymnastics, rest, carefully arranged dietary. Experienced staff of physicians and nurses from the Battle Creek (Mich.) Sanitarium. The largest and best equipped institution of the kind in New England. A large illustrated circular free on request. Address

The Attleboro Sanitarium

ATTLEBORO, MASS.

Or C. C. NICOLA, M.D., Supt.

ALL LINES LEAD TO
THE DUNCAN
NASHVILLE'S EXCLUSIVE HOTEL



— HEADQUARTERS —
SOUTHERN MEDICAL CONVENTION

BEST AMERICAN PLAN HOTEL IN
THE GREAT SOUTH

Rates: \$3 to \$5 Per Day
INCLUDING MEALS.

THE DUNCAN
L. F. BRADSHAW, Manager.



HERMITAGE HOTEL

*Headquarters for the Southern
Medical Association*

Nashville's New Million Dollar Hotel

Absolutely Fire-Proof. Equipped
with Every Modern Convenience.
Rooms with and without Bath.

For further information and for
reservations address

HOTEL HERMITAGE -:- NASHVILLE, TENN.

The Douglas Infirmary

Second Avenue, South, and Peabody
NASHVILLE, TENN.



May be reached by long distance 'phone, Main 1394. Arrangement made for ambulance service when desired.

Established in 1890, will be continued under the conduct of Drs. Lucius E. Burch and John Overton.

Arranged especially for the care of surgical and gynecological cases, with provision for a limited number of medical and obstetrical cases.

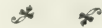
No one suffering with a contagious disease, and no insane or colored patients admitted.

Building is situated very pleasantly, being in a quiet, elevated part of the city and easily reached by the street cars. Has all necessary equipment for a hospital with the appearance and comforts of a home.



Shoffner Hospital

NASHVILLE - TENNESSEE



Quiet, homelike surroundings, with all Hospital conveniences and equipment. All operative cases, fever cases and a limited number of obstetrical cases. Address



Shoffner Hospital

TEL. M. 2897 11 LINDSLEY AVE

HOTEL SAVOY

Strictly Modern --- Thoroughly Fireproof

RATES

Rooms with hot and cold running water, \$1.00 day.
Rooms with private bath, \$2.00 and \$2.50 day.

To Convention Visitors--

Nashville's Leading Hotels Are
Advertised In This Journal

LISTERINE is a powerful, non-toxic antiseptic. It is a saturated solution of boric acid, reinforced by the antiseptic properties of ozoniferous oils. It is unirritating, even when applied to the most delicate tissue. It does not coagulate serous albumen. It is particularly useful in the treatment of abnormal conditions of the mucosa, and admirably suited for a wash, gargle or douche in catarrhal conditions of the nose and throat.

There is no possibility of poisonous effect through the absorption of Listerine.

Listerine Dermatic Soap is a bland, unirritating and remarkably efficient soap.

The important function which the skin performs in the maintenance of the personal health may easily be impaired by the use of an impure soap, or by one containing insoluble matter which tends to close the pores of the skin, and thus defeats the object of the emunctories; indeed, skin diseases may be induced, and existing disease greatly aggravated by the use of an impure or irritating soap. When it is to be used in cleansing a cutaneous surface affected by disease, it is doubly important that a pure soap be selected, hence Listerine Dermatic Soap will prove an effective adjuvant in the general treatment prescribed for the relief of various cutaneous diseases.

"The Inhibitory Action of Listerine," a 128-page pamphlet descriptive of the antiseptic, and indicating its utility in medical, surgical and dental practice, may be had upon application to the manufacturers, Lambert Pharmacal Co., Saint Louis, Missouri, but the best advertisement of Listerine is

LISTERINE

DRS. PETTEY & WALLACE'S SANITARIUM

For the Treatment of Alcohol and Drug Addiction, Mental and Nervous Diseases.

958 South 4th Street - Memphis, Tennessee

A quiet, home-like institution, large, shady grounds, retired location, new building, new and complete equipment, rooms en suite or single, private bath. Artesian water, steam heat, electric light. Improved bell system. An abundance of hot water at all hours. Every convenience for use of electro and hydro-therapy, massage, etc. Resident physician and trained nurses.

THE POTTENGER SANATORIUM FOR DISEASES OF THE LUNGS AND THROAT.

MONROVIA, CALIFORNIA



A thoroughly equipped institution for the scientific treatment of tuberculosis. High class accommodations. Ideal all-year-round climate. Surrounded by orange groves and beautiful mountain scenery. Forty-five minutes from Los Angeles. F. M. Pottenger, A.M., M.D., LL.D., Medical Director. J. E. Pottenger, A.B., M.D., Assistant Medical Director and Chief of Laboratory. For particulars address:

POTTENGER SANATORIUM,
 Monrovia, Cal.
 Los Angeles office: 1202-3
 Union Trust Bldg., cor. Fourth
 and Spring Streets.

SOUTHERN MEDICAL JOURNAL

PUBLISHED MONTHLY

Volume III.

NASHVILLE, TENN., OCTOBER, 1910.

Number 10.

ORIGINAL CONTRIBUTIONS

PROGRAM OF SOUTHERN MEDICAL ASSOCIATION.

Following is the preliminary program of the Southern Medical Association, to be held in Nashville, Tenn., November 8, 9 and 10, 1910.

SECTION ON MEDICINE.

Chairman's address.

"The study of the human and bovine bacilli, isolated from eleven cases of cervical adenitis." Wm. Litterer, Nashville, Tenn.

"Bacilli Carriers—A case showing the bacilli typhosus in the sputum." W. C. Dixon, Nashville, Tenn.

"The Gamete Carriers—Their role in the etiology of malaria." Graham E. Henson, Crescent City, Fla.

"A unique case of elephantiasis, caused by the streptococcus erysipelatous, associated with the bacillus prodigiosus." W. M. McCabe, Nashville, Tenn.

"Some thoughts on the relation of foods to temperature." George W. Brown, Atlanta, Ga.

"Further studies on the action of purgatives—The Saline Cathartics." George E. Pettey, Memphis, Tenn.

(Discussion opened by John A. Wither-
spoon, Nashville, Tenn.).

"The treatment of gastric and duodenal ulcers and hyperchlorhydria." E. Bates Block, Atlanta, Ga.

"Gastric Neurosis." George M. Niles, Atlanta, Ga.

"The digestive symptoms of pellagra." Seale Harris, Mobile, Ala.

"Infectious endocarditis." J. U. W. Peters, Birmingham, Ala.

"Dermatitis factitia—With report of cases." J. M. King, Nashville, Tenn.

"The use of veratrum viride in the treatment of pneumonia." C. W. Strickler, Atlanta, Ga.

"The quick macroscopic typhoid agglutination test—Its application and advantages." C. C. Bass, New Orleans, La.

"The plea of insanity and some pointed tests." J. C. King, Atlanta, Ga.

"The diagnosis of brain tumors." E. M. Hummel, New Orleans, La.

"Auto-intoxication in mental and nervous affections." Wesley Taylor, Atlanta, Ga.

"The home treatment of tuberculosis with comments on the use of tuberculin." C. M. Nice, Birmingham, Ala.

"Acidosis." Thomas D. Parke, Birmingham, Ala.

"Complications and sequellae of measles, based upon a study of 470 cases." Thomas Weaver, Nashville, Tenn.

"The treatment of acute catarrhal colitis in children." Charles E. Boynton, Atlanta, Ga.

"The Fermental Form of Infantile Diarrhoea." W. W. Harper, Selma, Ala.

"Aneurysm of the Arch of the Aorta—Report of a Case." J. B. Murfree, Murfreesboro, Tenn.

"The Use of Blood-Pressure Recording Instruments in the Diagnosis and Treatment of Hypertension." Bryce W. Fontaine, Memphis, Tenn.

"Indeterminate Fevers." Frank A. Jones, Memphis, Tenn.

ANTERIOR POLIOMYELITIS.

"Etiology." J. Ross Snyder, Birmingham, Ala.

"Pathology." Owen H. Wilson, Nashville, Tenn.

"Symptoms and diagnosis." Charles M. Nice, Birmingham, Ala.

"Treatment." Eugene Rosamond, Memphis, Tenn.

(Discussion opened by E. Laurence Scott, Birmingham, Ala.)

CARDIO-RENAL DISEASES.

"Pathology." Charles Whelan, Birmingham, Ala.

"Therapy." J. B. Guthrie, New Orleans, La.

"Vascular Features." W. H. Witt, Nashville, Tenn.

"Pulse and blood pressure." J. D. Heacock, Birmingham, Ala.

"Cerebro conditions." B. L. Wyman, Birmingham, Ala.

"Nauheim baths and physical therapy." J. S. McLester, Birmingham, Ala.

(Discussion opened by J. T. Halsey, New Orleans, La.)

Title to be announced. J. H. Honan, Bad-Nauheim, Germany.

SECTION ON OPHTHALMOLOGY.

"The terminations of chronic suppuration of the middle ear." Frank Cunningham, Macon, Ga.

"Trachoma." Louis Edelman, Mobile, Ala.

"The surgical treatment of mastoid diseases." C. M. Capps, Knoxville, Tenn.

"Malarial manifestations in the eye." M. H. Bell, Vicksburg, Miss.

"Edema of the glottis." Achibald C. Lewis, Memphis, Tenn.

"The artificial leech in acute mastoiditis." U. S. Bird, Tampa, Fla.

"Inferior turbinectomy and method of packing after operation." G. E. Vaughan, Clarksville, Tenn.

"Bronchoscopy demonstration." Richmond McKinney, Memphis, Tenn.

"Rule of thumb in refraction." A. W. Stirling, Atlanta, Ga.

"Some of refraction vagaries, especially after senility begins." A. G. Hobbs, Atlanta, Ga.

"The muscle indicator and its capabilities." G. C. Savage, Nashville, Tenn.

"Chronic laryngeal stenosis—treatment by Blindness as a result of malaria, with a report of two cases." W. L. Howard, Greenville, Miss.

prolonged intubation." Homer Dupuy, New Orleans, La.

"Some syphilitic manifestations in diseases of the eye, nose and throat." Hugh M. Lokey, Atlanta, Ga.

"Episcleritis." O. Dulaney, Dyersburg, Tenn.

"The Heath mastoid operation." M. M. Cullom, Nashville, Tenn.

"Surgery of the tonsils." Hilliard Wood, Nashville, Tenn.

Paper. H. H. Martin, Savannah, Ga.

SECTION ON SURGERY.

"Gunshot wounds of the abdomen." F. G. Dubose, Selma, Ala.

"Double perforation in typhoid fever." H. M. Folkes, Biloxi, Miss.

"Report of two cases: (1) Chylous cyst of mesentery with appendicitis; (2) Abscess of abdomen with fecal fistula." R. R. Kime, Atlanta, Ga.

"Why ligate the sac in hernia?" H. A. Elkourie, Birmingham, Ala.

"Treatment of railroad accidents." H. T. Inge, Mobile, Ala.

"Flat-foot and its treatment." Theodore Toepel, Atlanta, Ga.

"An operative plan for the correction of club-foot." Michael Hoke, Atlanta, Ga.

"Coxa Vara: The report of a case." Willis Campbell, Memphis, Tenn.

"Ulcers." W. F. Westmoreland, Atlanta, Ga.

"The treatment of fractures." T. J. Charlton, Savannah, Ga.

"The pathology and treatment of ununited fractures." J. N. Baker, Montgomery, Ala.

"Surgical aspect of fractured patella—a new incision." M. O. Shivers, Greenville, Miss.

"The operative treatment of compound fractures of the long bones." J. L. Crook, Jackson, Tenn.

"The Indications and Contra-Indications for Operating on Nervous Women." S. T. Rucker, Memphis, Tenn.

"Appendicostomy." O. S. McCown, Memphis, Tenn.

"Appendicostomy and end caecostomy as an aid to treatment in pellagra; (2) A few observations made in six cases. Proctoscopic and microscopic findings. (3) Results and conclusions." Jno. L. Jelks, Memphis, Tenn.

"Observations of the results of four cases of thyroidectomy for the relief of dementia praecox." Ralph N. Greene, Chattahoochee, Fla.

"Goiter with and without hypothyroidism." W. D. Haggard, Nashville, Tenn.

"The surgical aspect of gastric and duodenal ulcer." R. A. Barr, Nashville, Tenn.

"Gastro-enterostomy for benign conditions examined after two years." H. Berlin, Chattanooga, Tenn.

"Some observations on the surgical treatment of hepatic cirrhosis." A. A. Herold, Shreveport, La.

"My results with gonococcic vaccine." G. R. Livermore, Memphis, Tenn.

"Report of five hundred cases of gonorrheal

infection treated with gonococcic vaccine." C. W. Shropshire, Birmingham, Ala.

"Safeguarding society from the unfit." A. B. Cooke, Nashville, Tenn.

"Resections of the round ligaments for retro-displacement of the uterus." E. C. Davis, Atlanta, Ga.

"Purgatives with pain in the belly." C. N. Cowden, Nashville, Tenn.

"Surgery outside of the hospital, with report of interesting cases." J. W. Alsobrook, Plant City, Fla.

"Surgical dressings." L. Sexton, New Orleans, La.

"Report of cases." L. E. Burch, Nashville, Tenn.

(Title to be announced.) Moore Moore, Memphis, Tenn.

(Title to be announced.) John Smyth, New Orleans, La.

(Title to be announced.) Wm. B. Burns, Memphis, Tenn.

(Title to be announced.) C. W. Allen, New Orleans, La.

(Title to be announced.) W. R. McKinley, Columbus, Miss.

(Title to be announced.) R. B. McLaws, Tampa, Fla.

(Title to be announced.) A. G. Payne, Greenville, Miss.

(Title to be announced.) Duncan Eve, Nashville, Tenn.

"Surgery of the ovaries." J. A. Crisler, Memphis, Tenn.

"Cancer of the cervix uteri—its treatment." A. G. Paine, Greenville, Miss.

OBSERVATIONS ON THE SURGERY OF TETANUS*

By G. WILEY BROOME, M.D.,
St. Louis, Mo.

This paper is especially intended as a plea for more strenuous activities on the part of the surgeon in regard to a more radical, more vigorous and more intelligent application of the principles of antisepticism in the early treatment of wounds, i. e., at the first treatment, even though such a wound appears to be trivial, and especially if it is of the anaerobic class.

Within about a week's time, during the present month of September, 1910, I read among the news items printed in the local papers, the following references to four cases of tetanus, all resulting fatally. Whether or not other cases occurred during this same period of time I do not know, or whether or not there were other cases during this same week that developed tetanus and recovered I do not know. The basis of this study, therefore, relates only to these four cases and the fact that the mortality as mentioned above was one hundred per cent. The cases were described as follows, to-wit:

1. A. L., on August 13, sustained a splinter puncture at the base of the right thumb. The first symptom of tetanus developed August 26, thirteen days following the injury, or, in other words, trismus did not develop until after the lapse of nearly two weeks from the date of receipt of the injury. On that date, August 26, she was taken to a hospital, where she was treated with 3,000 units of anti-tetanic serum. The dose of the antitoxin was frequently repeated, but about three weeks later, or twenty-one days after the first appearance of tetanus symptoms, that is, on September 19, she died of tetanus. It must be observed that there were no reports published in regard to what was done for the local wound.

2. Agnes L., 10, on September 2, sprang barefooted upon the blade of a sickle, sus-

taining laceration of the toes. It is intimated in this item that one or two of the toes were severed from the foot, and on the arrival of the physician the toe or toes were replaced and sutured to the stump. September 8, or six days following the receipt of the injury, the attending physician discovered signs of tetanus, when he had the little girl removed to a hospital, where the anti-toxin injections were administered. The patient succumbed to tetanus September 10, at night, eight days following the receipt of the injury. At the hospital one toe was found to be gangrenous and was amputated, the stump cauterized with pure carbolic acid, and the wound dressed surgically.

3. R. S., 10, on August 12, fell from a wagon, sustaining a slight injury to his leg, which was thought to be so insignificant at the time that no treatment was given it. Twelve days after the injury was inflicted the wound became inflamed and about that time, that is, almost two weeks from the date of the injury, lockjaw developed. He was taken to a hospital, where more than a pint of the anti-toxin was administered by injections, but after hovering between life and death for seven days, he succumbed to tetanus. The reports conclude with the statement that the attendant was unable to account for the sudden change in the boy's condition at the end, that is, September 2. The item also conveys the information that in this case three days before he died his condition improved greatly and he was able to open his mouth more than an inch. There is no mention relating to the point that any special attention was given the wound even before or after he entered the hospital.

4. L. T., 10, died September 5, 2 p. m. Two weeks before the boy stepped on a rusty nail. Only members of the family treated the

*Read before the St. Louis Medical Society, Sept. 24, 1910.

wound. The wound was in the sole of the foot. Later when the foot became swollen the lad was then sent to a hospital at once, where 50,000 units of the tetanus anti-toxin serum were injected into the boy's body. Despite this, he grew worse, convulsions setting in, the jaws became locked and the body shortly twisted into a circle with the head drawn against the heels and in apparent great agony died. No mention is made in this case either as to whether the boy's injury to his foot received any special attention from either the attending physician or the surgeon at the hospital.

Ever since the Hippocratic era, when the more rational study of diseases began to assume more intelligent form, and down through the ages until the discoveries of Behring and Kitasato became the common property of all, the mortality in the dread disease of tetanus has been high, indeed pitifully high. In the light of all the splendid achievements in scientific discovery and the great advancement and improvement in surgical practice of modern times, the mortality of tetanus has shown a steady increase. While it is gratifyingly true that the number of cases, especially on our national holiday, the Fourth of July, has been reduced, and by efforts from sources to which we have not the time to refer, it is a fact that the death rate among this more limited number of cases is growing and growing alarmingly, and, I might add, in a most mysterious way.

In accordance with the reports published by the *Journal of the A. M. A.* for the present year, the last Fourth of July in the United States there were 72 cases of tetanus following the receipt of that form of injury which usually occurs on that heretofore noisy occasion. Sixty-four, or over 93 per cent of those cases of tetanus which were reported as having developed tetanus following injuries received on the Fourth of July in 1910 died from the disease. In 1909, the reports go on to state, that that only 84 per cent of the tetanus cases following the Fourth of July of that year proved fatal, and in 1908, of the Fourth of

July cases of tetanus, only 72 per cent proved fatal, following the anaerobic injury. On the Fourth of July of this year there were 150 reported as compared with 92 in 1910. Fourth of July injuries have been greatly reduced, at the same time the mortality by inverse ratio constantly increased. What rational explanation can we put forth to account for this unfortunate showing? Can it be due to one or two or both of the following causes:

1. Can it be reckoned how many cases would avoid or survive an attack of tetanus if there were no neglect or lack of attention on the part of parents at the time or immediately following the day on which the injuries were sustained? If all of this fault or much of it can be justly laid at the door of those responsible for the early care of the case, then how may this be remedied? The answer must come to this, in the form of a demand for a crusade for public education.

2. Can this increasing death rate be justly laid against a possible inefficiency of the application of surgical methods? In other words, can it be charged that the doctor depends too much upon the curative power of the anti-tetanic toxin serum and depends too little upon efficient surgical intervention?

Let us investigate a little further and perhaps more light may be thrown upon one or the other of the horns of the dilemma. At this stage I shall briefly refer to a single case occurring during this same period of time and that presented a typical anaerobic wound. An elderly lady, 60 years of age, was engaged in driving her chickens about the chicken-house. In trying to prevent their escape, she sprang with much force upon a rusty nail, which was forced into the middle of the sole of her foot to the depth of about one and one-half inches. I saw her on the second morning. She was then, as she expressed herself, "feeling quite sick," and had slept but little the preceding night. Her face was somewhat blanched with an anxious expression and she appeared otherwise nervous and apprehensive. I at once made the necessary preparations, and

after protecting the external opening of the wound, I scrubbed the entire foot. I then had chloroform administered, and when thoroughly under its influence I cut from the entire length of the wound all of the exposed raw surfaces with a rimer I devised for the purpose. I then excised the lid-like piece of tissue from the opening of the wound. After thus enlarging the wound to some considerable proportions throughout its entire course, I then swabbed it most thoroughly with a 4 per cent solution of formalin. After protracted efforts at swabbing I filled the wound with pure tincture of iodine, then washed the adjacent tissues about the wound with ether, rubbing with considerable force the tissues with a piece of cotton saturated with ether. During this process the outlet of the wound was kept plugged by means of a piece of gauze. After completing the disinfection I sealed the wound with dissolved rubber tissue, placed a compress of gauze and cotton immediately over the wound, then surrounded the foot and ankle with cotton and a roller bandage and placed the foot and leg half way to the knee in a fixed dressing. The old lady made a good recovery without any rise of temperature or symptom of tetanus infection. The second night following the operation, and after the effects of the surgical procedure which necessarily entailed considerable shock, and after the effects of the chloroform had worn off, she slept much better and on the third day began to improve, and in two weeks was able to limp about the house. Tenderness in the region of the wound only remained as a hindrance to easy walking up to the present time.

This single case came up during the same period of time, and with a wound similar in nature to those sustained by the four cases recited above, and which developed tetanus and terminated fatally. The wound in each case was typically anaerobic. Is there reasonable justification for the belief that with a less heroic method of treatment of the wound in the last case described, that she might also

have developed tetanus with fatal termination, as in the other cases?

From whatever direction you may draw your conclusion, I have much faith in the belief that it is possible to decrease the mortality records by more surgical aggressiveness.

No one of us, perhaps, is better able to appreciate the full gravity of a wound that is almost certain to be followed by infection than our valued fellow-member, Dr. Carl Fish. As an illustration of this fact I may cite your attention to an accident which befell him and relate the extreme measures adopted by him in order to avoid its serious consequences. He was engaged in handling some anthrax substance with a needle in one of our hospitals and accidentally pricked his finger. Almost immediately thereafter he sought the services of Dr. Morfitt and had the end of his finger cut away. Even where demanded, those less informed might hesitate to doing the same thing to others.

My personal view is that it is entirely inefficient and devoid of curative results to treat a case in which there is an anaerobic wound by merely cleansing and cauterizing the same. It is insufficient to simply pour the wound full of pure carbolic acid or even pure nitric acid and then submit the case to a doubtful fate, for in such instances it is just possible that the tetanus bacilli have gone beyond the limits of these escharotics, and after the formation of the eschar, an ideal field would likely be established for the growth of the bacilli behind the eschar. They would be found to be living in a medium destitute of free oxygen, their natural habitat. The wall of the typical anaerobic wound must be completely excised, after which the wound must be thoroughly swabbed throughout its entire depth with a 4 per cent solution of formalin; then the cavity may be filled with pure nitric acid or preferably pure tincture of iodine. The opening of the wound is then to be protected by gauze and a solution of guttapercha, and then the entire extremity should be immobilized.

After it has been cleaned out, and I mean

thoroughly cleaned, not sparingly, but efficiently made clean, it is better to seal the wound than to allow it to remain open and exposed to after-infection. In considering other phases of the subject we must not lose sight of the fact that the tetanus anti-toxin serum is not germicidal; that it possesses absolutely no power as a germicide; the power and duty, therefore, of securing bactericidal results remain entirely with us, and in trying to delegate this power to the anti-toxin, we are committing a wrong against the welfare of the patient.

It is under only certain conditions that the serum of Behring and Kitasato exercise any control over the tetanus toxin or have any power to neutralize them. Experience teaches that cases with long incubation periods come within the power and control of the injections better, improve and sometimes recover completely, provided, of course, that the wound into which the tetanus bacilli found entrance has been properly cared for. This fact must have an important practical bearing on the methods of employing complete thoroughness in clearing the local wound of all germ life and in antisepticizing the contiguous tissues and keeping them sterile.

In regard to the powerless influence upon the tetanus anti-toxin, it is a fact, I believe, that these microbes will themselves grow in the tetanus anti-toxin serum. There are many other phases of this broad subject that demand further careful study and consideration, but which time will not permit me to dwell upon. We must not fail to keep before us, when treating a case with an anaerobic wound, the following points in regard to the uses of the tetanus anti-toxin. It is known in the first place that the greater portion of the amount originally injected is usually eliminated unchanged in the secretion and excretion. Again, the maximum amount of anti-toxic substance injected into the tissues is not found in the circulation until after the elapse often of thirty to forty hours, and even after injection

of large quantities, there will be but a trace found in the cerebro-spinal fluid. Owing to the fact that absorption takes place so slowly the injections might be made directly into a vein in desperate conditions. Inasmuch, too, as a greater portion of the anti-toxin is eliminated unchanged, the injections must be repeated sufficiently often to make up for the continuous loss, and the inability of nerve tissue to take up the anti-toxin from the circulation, is the most significant fact of all so far as the serum treatment of the cases is concerned. But the stage in the course of a given case at which the conscience of the attending surgeon may likely feel most acute is when he is beginning to realize that there is no improvement after the case has lingered for days and weeks before the more serious form of the symptoms develop and death takes place. Especially will he find intervals of chagrin afterward over the case which shows improvement, that is the case in which there is noted a marked relaxation of the trismus, but eventually returning seizures destroys life.

My own clinical observations give me convincing faith in the belief that the tetanus organism itself does not enter the general circulation and set up its mischief there. It remains, I am wholly of the opinion, all of the period of time that the patient is suffering from the effects of its toxin in the original wound. It may never go beyond the limits of the wound. Here it is actively stored away from the presence of free oxygen. What mischief it does it does while concealed in the original wound, hence, in those seemingly stubborn cases, in which the organism is permitted to remain unmolested in the wound, industriously turning its poisonous product into the adjacent vessels, for days, and in some instances for weeks, is it unfair to think that not all has been done that might have been done in the way of clearing the wound of these accessible and localized death-dealing micro-organisms?

ADDRESS AT OPENING OF JEFFERSON MEDICAL COLLEGE, PHILADELPHIA

By DR. G. C. SAVAGE,
Nashville, Tenn.

The following is in part the introductory address of Dr. G. C. Savage, of Nashville, delivered by invitation on the evening of September 26, 1910, in Philadelphia, at the opening of the eighty-sixth annual session of his Alma Mater, the Jefferson Medical College:

Within two hours we had our first lesson in surgery, while you must wait two years. The science and practice of medicine were morsels that we had to take into our unprepared mental stomachs from the first day on, and digest them as best we could. You must wander through a period of two years in Histology, Pathology and Bacteriology before your first meal in medicine will be served. To obstetric science and art you will remain strangers for two whole years, while we began our mastery of this branch on the second day. Times have changed and medical colleges have changed with them.

I have said nothing of laboratories. The Irishman who prepared an essay on "Snakes in Ireland" wrote, for his first sentence, "There are no snakes in Ireland." "Laboratories in Jefferson"—there were none in my student days. We had a dissecting room and the opportunities for work therein were splendid, but we did not call it the anatomical laboratory.

How we learned chemistry without a chemical laboratory such as you now have, will ever remain a mystery. The professor of chemistry had a laboratory in which he must have worked faithfully, but like the holy place of the temple at Jerusalem, we were not permitted to enter it. Our chemical experiments were all performed by proxy, while we sat silent lookers-on at varying distances. Some of us were too far removed to see "action," much less could we observe "reaction." The test tube was too sacred for our touch. Really,

did we learn chemistry? So far as I know, not a single member of the class of 1878 has become famous as a chemist. There was no physiological laboratory, and yet we had the never-to-be-forgotten privilege of seeing, through the microscope, the circulation of the blood in the web of the frog's foot, a most beautiful sight to behold. I fear that this use of the microscope has been abandoned, since there are so many other things that must now be shown. Our histologic views were only two; first, a section of a long bone, showing the havercian canals; second, a section of the liver, showing its cells. Why these did not create such an interest in histology as to speedily demand many others, I do not know. For many years these three microscopes had been performing each its single duty. Doubtless the sections of bone and liver had done a continuous service for a long series of years, but the procession of frogs must have been a long and interesting one.

Bacteriology was a term not heard by us, and germs as a cause of disease had only recently been first mentioned. Only a few of these had there been discovered, and no means had been provided for showing them to us. The bacillus leprae, discovered in 1873, would have had no special charm for us, though confined in a microscopic slide. Not even the plasmodium malariae had been discovered, hence could not be put on exhibition. The bacillus of anthrax had been discovered, but it was not introduced to us. Only these two of the now long list of known germs had been discovered when our class began its student career.

How different now! In the laboratory which has been provided for you, your eye will be permitted to see, and your mind will be forced to study, a great number of bacilli, spirillae and micro-cocci and all of the known

protozoa. You will be required to become so familiar with the form and features of each that you shall be able, ever after, to recognize it with promptness and positiveness, though it might appear in a mixed company. In the laboratory of Histology, you will not stop at bone and liver, but you will become acquainted with the intimate structure of every organ and tissue of the body. You will also be permitted, rather required, to study with the microscope the changes of tissue under disease, a privilege we did not have. I need not mention the work in other laboratories which you must do, in connection with the fundamentals of modern medicine. The time and labor that you must devote to these studies precludes the possibility of your undertaking work in the practical branches for two whole years. But when you finally get to these branches, you will feel a sense of preparedness that was foreign to us.

Some of you to whom I speak tonight have already passed successfully through the two years of preparation for the practical, and tomorrow will begin the study of surgery in all of its branches, of medicine in its multiplied and enlarged phases, and of obstetrics in the light of modern research and investigation. The studies you undertake tomorrow will be continued, but without repetition, for eighteen months. Others of you have not only completed a continuous and unrepeatable study of the fundamentals, through eighteen long and tedious months, but you have had also your first year in the practical branches. Tomorrow you start on the home stretch. Next June, if you pass successfully the examinations of your faculty, you ought to leave these halls better prepared for the practice of medicine and surgery than any class that has preceded you. There ought not to be, for you, a period of waiting, such as had to be endured by those of us who completed the then-prescribed course in two sessions of five months each—just ten months in all. I do

not know how it was with all of the old-time boys, but I can give you a little hint as to how long and painful was my period of waiting. After graduation on the 12th day of March, 1878, I hastened home and rested until the first day of May following. On that day I opened my office in the beautiful little city of Jackson, Tenn., and continued to rest, so far as practice was concerned, for many long months. During the month of May I did four dollars worth of work, and collected two dollars. June was not a great improvement on May, for I did six dollars worth of practice during that month, collecting just three dollars. On the first of January following I took an inventory of my practice, for the eight months, and found that I had done one hundred and eighty dollars worth, and that my collections had not been over ninety dollars. The people knew the unpreparedness of the young doctor at that time, and, of their own accord and in their own interest, gave him an opportunity for reviewing his college notes, for studying his books, new and old, and for reading what journals he might be able to buy or borrow. I had time not only for this, but I also had time for reviewing much of my Latin, Greek, mathematics and physics, and for reading history, biography and fiction. My time of waiting for patronage was not lost time; the fact is, I was so busy that I did not realize the smallness of my income, and the corresponding scarcity of my practice. If I had not been the possessor of a diploma from Jefferson, I am inclined to think that my waiting would have been longer and more painful.

The people who judged us correctly will not misjudge you. Your diploma will not grow old while you wait. But, after all, your period of waiting from the day of matriculation to the day of getting busy, will not be shorter than was ours, namely, four years; for most of us who did not turn to some other occupation for a life-work, be-

came busy practitioners in about two years after graduation—four years after matriculation.

Jefferson Medical College and the South could have been made the subject of this address. I would do violence to my own convictions if I should fail to say that Jefferson has done much for the South; and I can truthfully say that the South has done much for Jefferson. Almost from its organization it was called the Southern Medical College of the North. From its very beginning in 1825, Southern patronage was drawn toward Jefferson, and now that the college is eighty-six years old, the South is still sending to her some of her brightest sons. There was a time when forty per cent of the students in Jefferson came from the South; and there was also a time when forty-three per cent of the faculty were Southern men. The attendance last year from the South was ten per cent, and the present faculty is ten per cent Southern. This latter statement may need some explanation. No matter where a man has been born, if he casts his lot with our people for one year he becomes a Southron. Copelin was thus transformed a few years ago, through a sojourn of one year in Nashville, as Professor of Bacteriology and Pathology in Vanderbilt University. When he was taken from us we felt like having the authorities of Jefferson College arrested for grand larceny. Prof. Holland has been in the faculty so long that probably some of his colleagues do not know that he came from Louisville. He has beating in his bosom tonight a warm Southern heart, for once of the South always for the South. Her blue skies and balmy breezes, her fair women and fast horses, her woody mountains and fertile plains can not be forgot. Jefferson has drawn and held Southern patronage, as no other college in the North has done, because of her desire to be the best and her disposition to do the best. Advancement and enlargement have been with her a passion.

The earlier years of Jefferson were years of struggle and threatened disaster. Three times within her first seventeen years she was without a faculty, every chair for that number of times having been declared vacant by the board of trustees. During this period of seventeen years, eight different men had occupied the chair of obstetrics, an average of about two years for each. This is hard to understand in the light of the fact that, during the last sixty-eight years the occupants of the same chair have numbered only four: C. D. Meigs, Wallace, Pervin and Davis. A look at the present professor would almost convince one that the combined service of these four will come near rounding out a full century.

With the dissolution of the third faculty discord seems to have disappeared. In the inauguration of the fourth faculty, in 1841, there was incorporated not only marked ability but also perfect harmony. "This new faculty held together in peace, order and prosperity for fifteen years, without a change." Through the dark period and through the period of dawning light, the profession of the South stood nobly by the college, sending their students in great numbers.

There were advance thinkers and daring doers in that faculty of 1841. J. K. Mitchell saw the plasmodium malariae with the eye of his imagination thirty years before it was seen with the physical eye, aided by the microscope. Likewise he saw the comma bacillus as the cause of cholera many years before its existence was physically demonstrated. What is still more remarkable, he saw with the eye of his inventive genius the bacillus of yellow fever, which has not yet been shown by the microscope, but whose existence no one now doubts. Thus he paved the way for the two discoveries in medicine that are of most importance to the South: First, the fact that the anopheles is the source of malarial infection; and, second, that the stegomyia is the carrier of the contagion of yel-

low fever. The latter discovery by Reed and Carroll lifted a pall from our Southland, and marked the beginning of a new era in the battle against the yellow scourge. In the South the phrase, "pouring oil on troubled waters," has not the fullness of meaning that attaches to the newer expression, "pouring oil on stagnant waters." The doing of the latter not only devitalizes the ova and destroys the larva and the pupa of the stegomyia, but it also renders impossible the development of waves of fear, such as formerly swept over our country, whenever the existence of a single case of yellow fever became known. No longer will there be a shotgun quarantine against people fleeing from infected cities, for they now know that they may safely abide in their own homes, under the protection of wire screens at windows and doors, and mosquito bars about their beds; while the mosquitoes themselves are kept from infected people by a still more thorough screening. If Mitchell and others had not persisted in their advocacy of the idea that low forms of vegetable life were the causes of malaria, cholera, yellow fever and other diseases, the real nature of these troubles would still be unknown. Progress would be impossible if it were not for men who can see ahead of their day, and are not afraid to tell of their visions.

The daring of a member of the famous faculty to which Mitchell belonged was shown when Mutter, in his Jefferson clinic, performed the first surgical operation in Philadelphia, under general anesthesia. This was done on December 23, 1846, within a hundred feet of where I am now standing. In this connection let it not be forgotten that the boon of anesthesia must be credited to the South, for it was Crawford W. Long, of Jefferson, Georgia, who first discovered its powers in the doing of a painless operation on a patient to whom ether had been given by inhalation to the extent of unconsciousness. This epoch-marking event occurred on March 30, 1842, just four years and nine

months before Mutter's operation. Long's discovery antedated that of Wells by two years and six months. Long was only twenty-seven years old when he discovered the power of anesthesia; and he was still living and active when this college gave to the class of 1878 their diplomas. His discovery made possible the wonderful era of surgery in which we now live. Georgia has justly honored his memory by placing his statue in the Hall of Fame in the capitol at Washington. No longer is there just ground for contending that Long is not entitled to all the credit as the first to discover and actually demonstrate the anesthetic power of ether in the practice of surgery. If there had been no discords in the earlier faculties of Jefferson, it is not unlikely that Crawford W. Long's name would be in the list of our Alumni. He graduated at the University of Pennsylvania, but the name "Jefferson" is to be forever associated with his name for the reason that his greatest work was accomplished at his home, Jefferson, Ga.

Wonderful have been the advances in all departments of medicine and surgery in the last twenty-five years. The advances in surgery would not have been possible except for two men of my Southland: One, Crawford W. Long, who gave anesthesia to the world nearly a half century before the very material advances began; the other, Ephraim McDowell, of Kentucky, who by his skill and daring made possible the abdominal surgery of today and of all coming time. The tragedy of the matter is that the surgical awakening caused by McDowell's work did not occur until about a half century after his death. The legs of the tripod of modern surgery are Long and McDowell of America and Lister of England. It was the delay of Lister's aseptic and antiseptic teachings that so long deferred the coming of our marvelous surgery. It seems a pity that he was not born earlier in the nineteenth century.

The advances in every department of medi-

cine and surgery created the necessity for lengthening and multiplying the courses of medical colleges, and the adopting of new methods and the changing of old methods in teaching. There will be further advances and they may come speedily, but when they do come, the effect should be to make easier the studies of the four years as now established. I do not believe that new discoveries will ever serve to shorten the time to be spent in college, but I am certain that their coming should not add one more year. The teaching about diphtheria has been clarified and simplified since Klebbs-Loeffler discovered the bacillus and since Behring, a little later, gave us antitoxin. The teaching about pneumonia has been simplified by the discovery of the pneumo-coccus, but how much greater will be the simplification when some man shall give us a serum, or some other agent, for its cure.

The search for germs should continue, but the great work of the future, as I see it, will be in the line of Therapeutics. There is yet enough of the unknown, especially in the field of therapeutics, to interest every medical man who has an investigative turn of mind. It may be that there is some one before me tonight who has not dreamed of greatness, and yet for him may be awaiting the opportunity to give to the world a real cure for tuberculosis, one that will be as certain in its effects as antitoxin is in diphtheria, or quinine in malaria. For such an one, no page in medical history would shine more brightly than that one on which his own name would appear.

There is a fascination about original investigation which would lead thousands afield, if it were not that this fascination is too often associated with an over-powering fear—a fear of the criticism which even a successful investi-

gator must face. The secret of success in original research is curiosity coupled with enough industry to satisfy it. Unfortunately every man who is curious to know is not industrious enough to work at an unsolved problem. Not every man who is industrious is endowed with an inquisitive turn of mind. The world cannot be advanced by two men, one of whom has a remarkable curiosity, while the other is painfully industrious. These two factors must be combined in one man if the world is to be moved by him. Even such a man must have the daring of a lion, the tenacity of a bull-dog and the hide of a rhinoceros. McDowell did not lose his temper or waste his time when one of his confreres, who had been a fellow-student in Edinburgh, said of him, "He went to Edinburgh a gosling and came back a goose." McDowell felt that he had the advantage of that critic in that he knew that he himself was no fool and that the other fellow was. It could not have been very pleasant to Jenner to look at cartoons representing him visiting his patients astride a cow, but conscious of the value of his discovery of vaccination, he grinned and endured. It is fortunate for scientific investigators and for medical science in particular that we live in a day when critics must be careful of their own reputation and courteous in their methods of criticism. I have known only one man in recent years who probably found an earlier grave because of caustic criticism.

My closing words must be the expression of a wish based on the fact that some medical colleges have closed their doors except to men with college degrees. My wish is that my alma mater shall always continue to accept men who have a high school education. A college degree is a thing to be desired, and should be attained when possible, but it is no guarantee that its possessor will attain greatness.

PREPARATION REQUIRED FOR THE PRACTICE OF GENERAL SURGERY*

By DR. G. W. GREEN,
Chicago, Ill.

In considering this subject, it might be well to note the preparation deemed necessary by some of those who are acknowledged by all to have been the greatest of surgeons.

For many years the surgeon held a special place in the minds of the general public. He was supposed, and did possess, special anatomical, pathological and physiological knowledge not required of his brother practitioner in the realm of medicine. He was expected to have spent years with a master before putting his patients' lives in jeopardy.

The late Billroth was certainly an ingenious surgeon, and a master of the surgery of his time. He might be termed the peer of the surgeons of his day. We find him professor and director of the surgical clinic at Zurich, Switzerland, for seven years, and also acting in the same capacity at the University of Vienna for many years. He was revered and honored by the surgical profession throughout the world.

How did Billroth achieve this justly deserved popularity? Without question, one of the greatest factors of this achievement was the thorough foundation he laid for himself in his early education. We find him as an assistant in Langenbeck's clinic for seven years before he commenced on his own account to practice on others. We find that when once launched on his professional career he limited himself to general surgery. We find him experimenting on animals along the line of and teaching clinical surgery throughout his whole life. He was so far in advance of his time that he performed a successful resection of the pyloric end of the stomach for carcinoma in a patient of forty-three years as early as 1881. His first complete extirpation of the larynx was done in 1874.

In his lectures he insisted on a thorough knowledge, both macroscopical and microscopical, of normal as well as pathological tissue. This part of his teaching has had a great influence on the development of surgery. One cannot say that he left any stone unturned, or spared any pains to perfect himself in the science and art of general surgery.

Our world-renowned Nicholas Senn spent many an hour in a basement laboratory, and doing animal experimental work before working out any of his new ideas on the human.

The celebrated John Hunter spent more than twelve years with the best surgeons of his time before launching upon his own career. Our own John Collins Warren spent years with the noted English surgeons, especially Sir Ashley Cooper, before asking others to risk their lives in his hands.

Joseph Lister spent nine years with Syme and others before beginning his own practical life work. It was while working under this great man that Lister made his bacteriologic studies in connection with antiseptic surgery, which entirely revolutionized surgery. It was the study and work with the great men of his time which prepared Joseph Lister to do well and successfully the experimental work, close thinking, and the clinical creative work, which has done more to make surgery what it is today than any other one thing in the history of surgery.

This era of antiseptics and asepsis enables the surgeon of today to open the abdomen, explore the gall bladder, remove neoplasms of the stomach, open the thorax, suture the heart, remove aneurisms, and open the cranium, besides opening joints, and doing many other things which the older surgeons dared not do.

During the evolution of the aseptic period the percentage of surgery done has increased

*Read before the Mississippi Valley Medical Association, September 13-15, 1910.

many fold, and until within the past few years this has been done by comparatively few men, men who have had long clinical experience with other good men. The public looked to these men for the best there was in surgery, and they were not disappointed, because these men had trained with the masters before them, and were all the time doing scientific research work along various lines, thus keeping in advance of their time.

Look at the lives of any one of our own surgeons who are making a success, and who are our leading teachers; who have done much to lower the mortality and bring the standard of surgery up to its present state of perfection, and you will find them all men who have spent years in this special line of work, leaving no stone unturned to so perfect themselves that they can do for humanity what is best in the safest way.

In the last eighteen years much has been learned about surgical diagnosis, surgical technique, surgical pathology in the living, and the ways and means of lowering surgical mortality. This advancement has come only by continued hard work, the study of the methods of others, a large amount of animal experimental work, and the bringing together of the surgeon and pathologist at the operating table, while the lowering of mortality has been brought about by the selection and classification of the risks, studying the time at which nature places the system in the best condition to withstand the operative shock, as well as the time when and when not to operate.

Much has been learned from a systematic study of the post-operative results. All will remember when many surgeons were removing the ovaries for the cure of real and imaginary troubles. A study of the post-operative results in these cases showed that, although the mortality was nil in the hands of good surgeons, the end results were also nil, or followed by a train of neurological symptoms, showing the patient to be really much worse on account of the operation, although the operation in itself was a complete success.

According to the U. S. Census of 1890, there were in the United States 2,166 hospitals for the care of the sick. This number excludes all State institutions. In 1900, according to the Directory of the American Medical Association, the number had increased to 3,699, an increase of 1,533 hospitals, or about 70 per cent. During 1909 the number had increased to 4,726, excluding the State institutions, an increase of about 27 per cent; of these 4,726 hospitals, 2,401, or more than 50 per cent, are under 40 beds. This increase in the last decade has largely been of the small hospitals.

During my summer vacation in the last six years I have visited forty-six hospitals, including many of the smaller ones. In nearly all of these smaller hospitals one may find four or five surgeons in attendance, many of them not trying to limit their work to surgery, and with no special training in surgery except an internship in a hospital; some of them without any hospital experience excepting what they obtained in some post-graduate course of two to six months' duration. I have seen a gash three inches long and an inch deep cut in an enlarged liver, because the operator had seen so few operations that he did not know when he was through the peritoneum, and thought he was cutting muscular tissue. I have seen an incision made two inches long in the small intestines in a case of appendectomy, with a normal looking appendix, because the operator had never opened the abdomen before. I have seen a gall bladder containing pus and stones, sewed up tight after removal of stones, dropped back into the abdomen, and the abdominal wound closed tight as a drum. I have seen acute gonorrhoeal pyosalpinx made a primary operation, while the patient was running a high temperature. I have seen gall stone patients operated on while in an acute septic attack. All of us have seen operations lasting two or two and one-half hours which, for the safety of the patient should not, and with a competent operator would not, have lasted more than an hour.

It is needless to say that the mortality of

this class of cases under those conditions is high; the post-operative results are not what they should be.

Thus it will be seen that there is entering our profession a class of men doing surgery who are not as well equipped for their work as the great surgeons of the past were for theirs.

I am not the first to call attention to this evil. Dr. Carstens, of Detroit, Mich., read a paper entitled the "Embryo Surgeon" at a recent meeting at Ft. Wayne, Ind., and Dr. Cordier, of Kansas City, read a paper entitled "Elements of Success in Surgical Work" at the last meeting of the Mississippi Valley Medical Association. These two papers handled the subject much more tersely than I, and are well worth the perusal of anyone interested in this subject.

Why should the surgeons of to-day expect to attain results with less hard work than our predecessors.

Why have we this class of men essaying to do surgery?

First—Because modern asepsis has made it possible for even a tyro to open the abdomen without the death of his patient.

Second—Because our medical colleges have paid more attention to the teaching of surgery in the last fifteen years than they have to any other subject. In one of our leading colleges surgery is one of the nine departments, and has 30 per cent. of the teachers of the school. The hospitals have turned out internes after one or two year's service, fully imbued with the idea that they are as fully able to do surgery as their teachers.

Third—Because we as a profession have been teaching the people that there are certain conditions which demand immediate operations, such as appendicitis and gall stones for example. While this is good teaching if the patients are in reach of a good surgeon, it is pernicious doctrine if a poor surgeon is near. It is much better for the patient with an acute attack of appendicitis to adopt the Ochsner starvation treatment, and have an interval operation at the hands of a competent surgeon,

than to risk himself in the hands of a surgeon of limited experience.

Some one says, What are these small hospitals to do? Should they be closed and not allowed to exist? Not at all. Supposing we have a small hospital of thirty or forty beds in a town of 10,000. Would it not be better for the physicians of the community to select one man to do this surgery for them, and demand of him that he should spend enough time in preparation, and after he is prepared, enough time with good men each year and research work of his own to enable him to keep his mortality nearly as low as the majority of good operating surgeons, and his post-operative results equal to those of the best surgeons.

There is another reason why so many doctors aspire to surgery.

We have taught the laity to look up to and respect the surgeon above any other of the medical profession; not to respect him with the mind alone, but with the pocketbook. This is not right. The surgeon should have his just dues, of course, but that *just due* should not mean more respect or more money than for any other branch of the profession, who spends the same time and labor, perfecting himself in his branch. There is just as great a field for the internal medicine man as for the surgeon, and their honor and fees from the public should be equal for equal service rendered.

In conclusion, I would say the public have a right to demand of the surgeon to-day:

1. A good foundation in the shape of a diploma from a good school.

2. Considerable time spent with a master of surgery, so that he has the following knowledge:

- (a) Sufficient experience to make a correct diagnosis.

- (b) Sufficient experience to know what is the best to do when the diagnosis is made.

- (c) That he shall know just how to do the work and enough practice to have a definite surgical technique of his own, so that he is capable of performing the operation he es-

says, or any complication which might arise from that operation in an average length of time.

(d) That his mortality shall be as low, and his post-operative results as good, as the average surgeon.

In return the surgeon has a right to expect a fair remuneration and respect from the public, but no more than any other member with equal qualifications, specializing in any other branch of this, one of the noblest professions on the face of the earth.

TREATMENT OF ADVANCED CASES OF APPENDICITIS WITH INTESTINAL PARESIS.

By J. N. LEWIS,
Roanoke, Va.

In the earlier days of the study of appendicitis many more cases of the advanced type presented themselves than at the present time. Dr. Willard Parker of New York in 1867 was the first in America to take the most important step in the development of the surgery of the appendix, and the important object of his writing was to declare what good results were likely to attend an early incision and to counsel its wider adoption.

This advice received impulse and advancement by the discovery and adoption of antiseptics, in the following year by Dr. Lawson Tait, that great pioneer in our art. Since this time there have been great strides in abdominal surgery and asepsis that one seldom meets with an advanced case of appendicitis in cities, towns, or thickly settled districts; but these cases almost always are found in the sparsely settled country where the doctor is hard to get, and the people have not been educated to extreme dangers of a neglected case as compared to the almost complete safety in an early operation.

The cases to which my paper refer are those which have gone to suppuration and pus formation, with adhesions of coils of the intestines, and the onset of ileus with its distressing and fatal symptoms. The condition of paresis of the bowels is due to the absorption of septic material and peritonitis. If the surgeon simply makes an incision and removes the appendix with drainage, and does

not relieve the extreme distention of the bowels, his patient will die and his operation prove worse than useless. Almost all can recall such cases in your past practice. I have in mind no less than four that came under my care in the past years. I believe now that had I adopted the procedure which I will describe to you these patients would be living today. But in those days I had not done as much surgery as I now have, neither had I ever heard of its having been done.

I can best avoid reiteration by describing a case on which I recently adopted this procedure.

A fairly robust farmer 68 years of age, from the mountainous district, had been taken with severe pains in his abdomen, nausea, and vomiting, and very little rise of temperature. He took a cathartic which moved his bowels well, but the pain localized in his right side and continued there.

He had been afflicted for a long time with an inguinal hernia, but which had not come down for some years. He attributed his pain to this and did not call his doctor for three days, during which time he did not receive satisfactory movements of the bowels.

When the doctor came he was misled by the absence of the rise of temperature, low pulse, and history of hernia. He gave cathartics without much avail, and two days later was called again, when the patient showed great distention and consequent distress.

He recognized a case of obstruction of the bowels, and attributed the cause to adhesions from the old hernia. He therefore brought the patient to the Lewis-Gale hospital, where upon examination May 14, 1910, I found the following conditions: Great distention and distress, anxious mien, some vomiting of stercoraceous matter, temp. 100-F with a pulse of 68; tenderness and pain low down in the right inguinal region, bowels not moved for five days.

On account of the age of the patient, and his extreme condition we hesitated to subject him to an operation. However he was etherized and an incision made along the right rectus muscle and the abdomen opened. I found the bowels matted together by adhesions from a very large gangrenous appendix reaching down in the pelvis. These adhesions were loosened and the appendix removed. As the bowels were adherent to the old hernial sack, I removed this. A drain was put in the wound leading to the appendiceal stump and the rest of the wound closed. The patient stood the operation well, which only lasted forty minutes. He was put to bed and I expected his bowels would soon move. The next day however all efforts to move his bowels were ineffectual, and the distention increased.

It was evident to all that the patient could not last long. Then it was that I decided to put into effect the following operation.

He was removed to the operating room, etherized and the abdominal wound reopened. When this was done the over distended colon pushed out. This was grasped with two forceps about one-half inch apart and gauze packed snugly around the gut in the opening. A purse string suture was then inserted around the forceps, just as in gall bladder operation. The gut was then opened between

the forceps, and a rubber tube inserted well up in the ascending colon, the suture tightened and fastened to the tube. Then another suture was inserted about one-half inch from first, and when tube was shoved in the gut was inverted, and suture tightened.

When the tube was inserted a great amount of gas escaped, and the distention was relieved very much. The abdominal toilet was completed and patient put to bed. Where hot normal salt solution was used through the tube to irrigate the bowel, this not only removed a great deal of fecal matter, but stimulated peristalsis and caused a great amount of gas to escape. He was so much relieved that his vomiting ceased, and his symptoms improved rapidly.

After four or five days we succeeded in getting his bowels to move per rectum, and in a short time the tube was removed from the colon, or rather it came away of its own accord.

I attempted to close in the fistula by Lembert suture, but there was so much local infection around it that the stitches sloughed out. For some weeks he passed some of the bowel contents through the fistula. The muscles fascia and skin immediately around the incision sloughed out but after four weeks this filled up by granulation and the fistula closed also. This old man, who is now well and healthy, undoubtedly owes his life to the direct drainage of his bowels.

I have used this procedure on several other patients and they all completely recovered. Of course the use of the Fowler position and the Murphy drip salt solution must be carried out just as in any drainage case. If I have impressed sufficiently upon your minds this simple life saving procedure, I shall feel freely rewarded for my efforts in bringing it before you.

CAPSULE CATARACT OPERATION, WITH REPORT OF CASE.

By DR. J. P. CRAWFORD,
Nashville, Tenn.

Cataract is an opaque condition of the crystalline lens, due to structural changes of its component fibres. Various classifications have been made, but for our use we will divide them into congenital or soft and senile or hard, complete and incomplete. By soft we mean, in a general way, those occurring before thirty or thirty-five years of age. Senile are those after this age. Complete are the fully matured, or uniformly clouded, while the incomplete are only partially cloudy.

Etiology is still in many cases very obscure. Heredity unquestionably plays an important part in the congenital, as well as in the senile forms. It is not an unusual thing to see two or three cases in young children in the same family. I have two cases which I will report later. Hopkins reports four children in one family, both father and mother having developed the disease at an early age. Hasket Derby—eight cases among ten members of the same family. Jno. Green twenty-one cases in seventy-one persons in six successive generations of one family. Senility, diabetes, convulsions in children, faulty development, inherited syphilis, injuries to lens, foreign bodies, blows, etc. In children the diagnosis is often not made until the child starts to school. Various forms of eye strain are believed to be productive of cataract. In later life a frequent change of glasses should be looked on with suspicion. It is not unusual to hear the expression, second sight. In many of these cases we find the presbyopic eye becoming myopic from a gradual clouding of the lens in such occupations as blacksmiths, foundrymen, glass blowers where these persons are subjected to intense heat.

General symptoms: Gradual failure of vision, inability to obtain suitable glasses, necessitating frequent change in their glasses. If the opacity is central at the beginning,

the patient sees better at night due to dilation of pupil. If cloudiness begins in periphery, he sees better in the daytime. Finally the vision is reduced to light perception. The diagnosis can be made at any stage by the ophthalmoscope. When we speak of the cataract as ripe or fully matured, we mean that condition where lens is uniformly cloudy and patient only has light perception or follow a candle held in front of the blind eye. There can be no specific time stated when a partial or beginning cataract will become mature or ripe, anywhere from one to thirty years. Where the progress is slow we can often use atropine in central cloudiness, but the atropine should be cautiously used in old people, for fear of glaucoma. Esserine should be used in perifal cloudiness to improve the vision. While in the Presbyterian Eye and Ear Hospital at Baltimore there was one old woman with central cloudiness who had been coming to the hospital for thirty years or more for her drop of atropine, with apparently little advancement of cataract. After she would get her drop she would be able to read the papers. I shall not go into the pathology or details of the various operations, but will attempt to trace the successive steps as far as our knowledge, and the various operations up to the present time. Cataract was known as far back as the ancient Greeks and Romans and operated on, though they had an erroneous conception of the nature of the disease. They located the opacity in front, and not in the lens itself. The lens was considered to be the seat of vision or perceptive organ, instead of the retina. They operated by depressing the lens into the vitreous, but thought the opacity was situated in front of the lens. The operation of depressing or couching, as done by them, was usually followed by loss of the eye, and as

a consequence fell into disuse or was abandoned, except by traveling physicians and often priests who would operate with temporary brilliant results, as the patient would be able to see at once, and the operators would shortly take their departure with the blessings of the deluded victim to be later damned by the same individual, as in most cases the eye would be lost from inflammation induced by the irritation of the depressed lens acting as a foreign body. I shall quote freely from an historical paper written by Samuel Hopkins Brown in *Annals of Ophthalmology*, page 310 (1904). He states that Galen alludes to the operation in his writings, but seems not to have done the operation. Avercenna in his description of the couching operation mentions that some surgeons, in addition, open the lower part of the cornea, and extract the opaque lens. This is one of the earliest mentions of extraction of the lens. In 1604 with Kepler's announcement that the lens was not the seat of vision, the operation was revised, and there were various modifications of instruments and technique. This was followed by discission or breaking the lens by means of a needle, as a substitute for couching. Neill, Lawrence and McKenzie all recommended the operation of couching about the middle of the last century, but from this time it was supplanted by extraction. In soft cataract suction and lavage are both used by many operators today. First, extraction was with a hollow needle. This was followed by an incision of cornea a little below the pupil, and lens removed by the curette. In 1745 Daviel operated by making a small cut at the lower margin of cornea with knife and enlarged the opening with scissors, passed a blunt needle through the opening, depressed the lens through this opening and removed with hook. By 1750 he had so perfected the operation to his own satisfaction that he employed it exclusively in his operations. Barth, in 1795, used a triangular

knife and made the section upward known as Beer's knife in use at the present time by some operators. Beer in 1799 rejected the operation in which the capsule is first lacerated, and extracted the lens and capsule together. Then the Von Graefe operation was performed a few years later by linear extraction with a narrow knife with or without iridectomy. This is the operation used today by many operators. Some make the linear incision and extraction called simple in contradistinction to combined operation with iridectomy. The last few years Dr. Smith of India makes the incision and expresses the lens without first rupturing the capsule.

In the past year Dr. Savage invented an instrument and devised an operation to first dislocate the capsule and its lens, and deliver through a previous linear incision upwards. The needling operation is now practiced by the majority of operators in congenital cataract in children, as it unquestionably is the safest operation in such cases. The operation should be done under cocaine anesthesia, unless the child is very small, when a general anesthetic should be used. Atropine should be used before and after the operation. Instruments: Speculum, fixation forceps and needle with triangular point and tapering shank, thereby preventing any loss of aqueous during the operation. Pass needle from outer side near the sclero-corneal junction. As soon as the point enters anterior chamber, depress the handle and then pass needle through the anterior chamber to about center of pupil. With point of needle open anterior capsule, being careful not to make too free an incision. The needle should be quickly withdrawn. Atropine instilled, both eyes bandaged and the little patient put to bed for twenty-four hours, when the bandage should be removed and atropine instilled. The eye operated on should be kept bandaged until all inflammation subsides. Then if in any hurry a second needling on the same eye or the other eye can be done in a few days.

Usually from two to five operations will be sufficient to absorb the lens substance. The next question is when shall the operation be performed, and the advantage. I think the preponderance of opinion is the sooner the better, for if the child is operated on at a few weeks or months of age, the retina will develop better. Another question in dispute is, should the operation be performed when the cataract is mature in only one eye. I unhesitatingly answer, yes. It permits the development of the retina, while the two eyes may not focus alike and probably will not even by correction. Undercorrect the cataract eye, thereby giving your patient a larger field of vision, and avoid the necessity of his having to turn his head in order to see an object on that side. I am also a strong advocate of operation on the one eye without waiting for the other lens to mature in senile cases, for not only the reasons stated above, but for the further fact that your patient at the time if in good health, and two or three years hence, when his good eye becomes ripe, his general health may not permit of an operation, as occurred in the case of my own father, who was forced to submit to blindness for a year before he had recovered his health sufficiently to be operated on. It is not an unusual thing in examination for glasses to find a similar state of affairs, the weaker eye becoming amblyopic from nonuse, as nature ignores the blurred picture of the weaker eye, and the better eye does all the work except for large objects; yet, notwithstanding this fact, many of these individuals are not even aware that there is any difference in the two eyes. This being the case, why should we not advise and operate on a mature cataract, without waiting until both are ready for operation? Nature can take care after operation as well as inequality of retina of the eye. Two by ignoring the blurred picture as stated above. In congenital cataract in children, when the cloudiness is central, an iridectomy will often give fairly good vision.

without any further operation. In conclusion I wish to briefly report a few operations for congenital cataract in my service at the blind school.

Case 1. Jennie H. 10 years old. Double congenital cataract. Both lenses needled twice at rather long intervals. The lens substance partly absorbed, leaving a tough membranous capsule. April, 1909, R. eye, upper section of cornea and extraction with iris forceps of the opaque capsule. May, 1909, L. eye a similar operation, later an iridectomy, both eyes downward, one two weeks after the first. 10 D. S. lens ordered. The child's parents left the state, and she did not return to school this year but a few days ago our nurse received a letter from her, stating that she was attending the public school and getting along nicely.

Case 2. Norman W. Thirteen years old. Double congenital cataract. Could count fingers. Four needlings at intervals on each eye. In the first operation on each eye, this boy suffered with nausea and vomiting for three or four days, due to the swelling of the lens, but at the subsequent operations there was no nausea or vomiting. Vision with 10 D. S. 15-50 Jaeger No. 3. Jaeger No. 4 or 5 is about ordinary type.

Case 3. Barney W. Age 9. Brother. Double cataract. Could see to get around. Two operations on each eye with 10 D. S. vision 15-40 Reads Jaeger No. 3 without trouble at time of examination.

Case 4. Brown K. Age 14. Left eye previously operated on before entering school, with loss of vision. R. congenital cataract. Needled twice. 10 D. S. vision 15-40 Jaeger No. 3.

Case 5. Ida K. Age 14. Double congenital. Both lens dislocated. Needled each eye once, both lenses were depressed without neare entering capsule. Glasses given with vision improved, but six months later the lenses were again partially presenting behind the pupil. No further operation attempted.

Case 6. Horace H. Age 9. Left eye previously operated on. No vision. R. eye also previously operated on. The boy had some vision, but on examination he had apparently a secondary cataract. I needled the eye twice. In the second operation there was a band extending across the pupil, which after some little effort, I succeeded in cutting across. The eye was bandaged, as usual. Two days later, when I saw the boy, the eye was very much inflamed and the anterior chamber was filled with what I then took to be an exudative deposit. I began hot applications, and on my next visit the inflammation had cleared up some, and I then saw that the deposit or substance in the anterior chamber was not an exudate, but the cloudy lens which had evidently been depressed and held down by this band stretching across the pupil, and had been liberated when the band was cut. I continued the treatment, not feeling it safe to open the eye with the active inflammation going on. After about a week the inflammation had subsided sufficiently, I thought, to be safe in making a section of the lower segment of cornea and remove the lens, but I found it impossible to remove all of the lens substance. I bandaged the eye and kept the boy in bed with atropine every three hours and hot box. The corneal section healed promptly, and under the treatment the eye seemed to be doing nicely, but as it was at the end of the session, I wrote his mother instruction how to continue the treatment, and advised her to have an eye man to see him, if the eye gave him the least trouble. The child was from Memphis, and several weeks afterwards I had a letter from his mother, stating she had consulted Dr. Ferrington, and he wanted to know what I had done. I wrote the doctor what had been done, but heard nothing from either. The boy returned to school this session, and on examination I find the inflammation subsided, closed pupil. T— with light P. I am afraid there is little chance to do anything for the eye. I have reported

this failure along with the successful cases and in detail, as I feel I was, under the circumstances, justified in each step taken, notwithstanding the fact that in all probability the eye will be lost, as the complication was unforeseen and could hardly have been anticipated by any one. I may add, had the lens presented itself at the time of the operation, I would have performed a section and removed it at once, which would have been a comparatively easy matter before any inflammatory adhesion to the iris, or breaking up of the lens substance, then the lens could have been removed without leaving any lens matter in the anterior chamber.

Case 7. George R. L. eye cataract with detachment of retina and loss of vision. Lens luxated. R. eye lens luxated and transparent. When the pupil is dilated the lens will pass into the anterior chamber. There is no detachment of the retina, but with complete detachment in left, and the further fact that he has a sister at the school blind with phthisis bulbi or trophy of the ball, as her history would indicate, due to detachment of the retina and loss of both eyes, the question is what should be done in this case. I have been, and am now, of the opinion that to remove this luxated lens would increase the chance of detachment of retina and ultimate loss of the eye, and as it now stands he can see to get around and that perhaps is better than an attempt to remove the lens. Of the eight eyes operated on by me the result in seven was all that we could hope for. The eye of case 6 with its present bad outlook is very much to be regretted. As stated before, I feel that the complications were not to be expected or foreseen, and in all probability would have occurred in the hands of any other operator. While I believe this to be the case, I am free to confess it is poor consolation for a lost eye. My chagrin is far greater for the one lost than the pleasure derived from the other seven successful ones.

INTUBATION IN DESPERATE CASES

By O. H. WILSON, M.D.
Nashville, Tenn.

Case No. 1.—John C., age 10 years, seen with Dr. W. B. Anderson, ill four days, though seen by the doctor a short while before. Had been croupy steadily four days. When seen, patient was livid, unconscious, breathing with great effort five or six times per minute. No corneal reflex, pupils dilated, skin clammy and cold, no radial pulse.

Tube was introduced without causing slightest struggle, and in two hours he had reacted, and with a copious dose of antitoxin made an uninterrupted recovery.

Case No. 2.—Baby Gourly, 2½ years old, living some distance in country, well nourished, ill five days with croup. When seen at noon there was no dyspnoea and only slight croup; the diagnosis was made by the persistent continuous croup (four days) and the presence of tonsillar diphtheria in the child's older sister, as there was no pharyngeal membrane. Five thousand units of antitoxin were given to each child. About midnight the croupy symptoms intensified and a nearer physician was called, who gave more antitoxin and emetics. Early the next morning I was called and found the child in the same condition as in preceding case, only worse, if possible. Had been pulseless since midnight, was cold and scarcely gasping. In half an hour after a rapid intubation, he was warm, pulse had returned, entirely conscious, and made a rapid recovery.

Case No. 3 was quite similar except for the termination. A girl of two years, seen with Dr. Elliston. She had been for three days under his care, and had been given antitoxin. There was a pharyngeal deposit as well as laryngeal symptoms, which became distressing twelve hours before calling me. When seen, her condition was about as the other two, except she was quite pale, breathing a little better than No. 2, but the condition not so desperate, though enough so to make me, as

in the other cases, say to the mother that it was almost hopeless.

This case was more toxic; the doctor opposed intubation, but the mother insisted, and with the memory of the two previous cases fresh in my mind, I introduced the tube. Immediately upon introduction of the tube, the child ceased to breath. There was no struggle—no sign of strangulation—no blueness. It was impossible to restore respiration in any way, though by artificial methods we could make air pass through the larynx. The cause of the death was not determined. I do not think it was caused by pushing down the membrane before the tube, as there was no struggle or evidence of strangulation, and the air could be made to pass through the larynx by artificial respiration. The heart beat quite feebly for a short hile **after respiration ceased.**

The deductions to be drawn from these cases are:

1. No case is too desperate to contraindicate the introduction of the tube. While there is life there is hope.
2. Intubation properly performed adds nothing to the danger of an ordinary case of laryngeal diphtheria. The pushing down of membrane is a possible but an overrated danger.
3. The process of absorption of membrane is usually too slow in laryngeal diphtheria for the action of antitoxin.
4. That cyanosis is not a guide to proper time of intubation. A child may die of exhaustion due to difficult respiration while still getting enough air with great muscular effort to prevent cyanosis until the very end. None of these cases were markedly cyanosed.
5. Any use of accessory muscles of respiration calls for the tube. The use of accessory muscles of respiration is an unnatural strain, which the child cannot stand long and can only be done while awake, hence the child soon be-

comes exhausted as from excessive use of any other voluntary muscles.

6. Laryngeal diphtheria demands closest watching. The growth of membrane, hence the increase in constriction is rapid and the

absorption very slow. When the propriety of tubing is under consideration, patient should be seen every six hours, and if patient is inaccessible and seen only once daily, I believe the existence of any laryngeal constriction warrants the introduction of a tube.

TUBAL OR EXTRA-UTERINE PREGNANCY.

By J. HUGH CARTER, M.D.,
Memphis, Tenn.

There are but few subjects in the whole range of medicine that excite more interest, both to the general practitioner of medicine and the surgeon, than tubal or extra-uterine pregnancy.

Of all the phenomena or mysterious process of life, the most mysterious is that an ovum becomes impregnated and developed into a living child other than its normal development. Therefore, this extraordinary phenomenon is great and becomes more so by the fateful possibilities of the situation as well as the dreadful outcome which may at any time determine a doubtful diagnosis and rob the poor victim of life.

For these reasons and that in nearly all cases, in first stage, fall into the hands of the family physician, it is, therefore, important that we should know more about the subject and be able to make a correct diagnosis and not wait for the surgeon and proper means for their relief.

Until the past few years tubal or extra-uterine pregnancy was thought to be extremely rare, but it is now known to occur quite frequently if not common. There are but few physicians who have been in practice for the past ten years that have not seen or heard of a case. Vit has shown that many of these cases of irregular menstruation associated with colic, tympanitis and pain on standing, which pass off without any treatment other than a purge and hot douches, are all in reality a mild attack of tubal pregnancy.

For these reasons any irregularity or devia-

tion from the normal during gestation should arouse our special attention. It may be said that tubal or extra-uterine pregnancy in its early stage belongs to the family physician, but as soon as the diagnosis is made it should be transferred to the surgeon.

After we have seen one case, the diagnosis thereafter is more quickly made. In order to make a correct diagnosis and grasp our subject properly, we must know the cause and the course, if left alone, in tubal pregnancy.

Dr. Kelly states that extra-uterine pregnancy occurs in any one of the five places along the tube, from within outwards:

1. In ovary.
2. In the tubo-ovarian fembra.
3. In the ampulla.
4. In isthmial.
5. In the interstitial portion of the tube.

The most common is the ampulla and next isthmial. The interstitial form is rare, and of the ovarine, only a few have ever been seen.

Cause—It is now thought that the spermatazoa travels up the uterine well, enters the tube and down until it meets the ovum at or near the avary, this by its own volition or propulsive movements, while the ovum, which is much larger, must be carried out through the different parts of the tube by other propulsive power. Therefore, anything that would have a tendency to stop or retard the movement of the ovum along its course might be said to be one of the causes of tubal pregnancy. Namely:

1. Any pelvic adhesion may bind the tube

down or bands running across the tube producing a loop that would obstruct the progress of the ovum.

2. Tumors of the tubal mucosa or fibroids of the uterine cornia blocking up the isthmial of the tube.

3. Tubo ovarian cyst by causing a twist in the tube.

4. Webster states that inflammation of the tubal mucosa by which its colia are destroyed, which are the propelling power of the ovum.

5. Diverticula in the tube sometimes stop the ovum.

6. The long, narrow, winding tubes that are found sometimes in normal women are said to be a cause.

7. Any pressure from within or from without that would cause a blocking of the calibre of the tube would be a cause.

From these facts it will be seen that not one but many causes operate to bring about tubal pregnancy, which are not confined to a woman of a particular locality, but are found wherever there are women to become pregnant.

What is the direct cause in any one particular case can only be determined at the operating table or pathologica laboratory. Even then it is impossible in some cases.

The operating rooms has proven one thing: That women who have had one extra-uterine pregnancy are more liable to another, and that they rarely occur in the normal woman; that is, one that has not had some trouble or irregularity during her menstruation. Therefore, we should watch after these women very closely.

Accidents which may happen to the ovum are many. It usually always ends by violent death, caused by rupture of its sac, tubal abortion, when it slips out into the abdominal cavity. Sometimes the ovum becomes encapsulated by hemorrhage which cuts off its nourishment and, therefore, dies. It is very rare that the foetus goes on to term. The false labor pains come on and if the correct diagnosis is not made to the foetus removed by

abdominal section, it dies and begins to undergo degeneration or mummification and etho-pedion formation may take place in the foetus. Rupture may take place into broad ligament, peritoneal cavity.

I have seen three cases in the past five years. Two of which were my own, the other while an interne at the Memphis City Hospital. One to full term, one four months and one six weeks, all of which I shall report at the conclusion of this paper.

Diagnosis—I might say the symptoms before and after rupture. Before we usually have a woman that gives the history of a suspicious pregnancy; that she has not been as regular for the past two or three months with her menstruation as usual, sharp, cutting pains in the side where the pregnancy occurs. Menstruation may come each month, but scant, may pass shreds of mucuous and endometrium. Very frequently there is more or less pain during intercourse, especially a soreness a day or so following exciting menstrual flow. Increase in size of abdomen more noticeable on one side and seems to be a little higher than in gestation. Occasionally the woman may pass off great chunks of endometrium, and thereby suspect she has aborted.

Tubal or extra-uterine pregnancy usually occurs in women that have not borne children for sometime and have had more or less trouble during their regular monthly sickness.

On external palpation we will find a tumor usually situated in one side and boggy-like to touch and not so symmetrical in shape and outline.

Bimanual palpation usually confirms what we found as above with more or less pain when pressure is exerted on the tumor. We also find the uterus somewhat enlarged, but not in proportion as it would be in uterine gestation.

After rupture the first symptoms are pain, cutting in nature, coming on suddenly and situated to one side with more or less shock. Of course, this would be governed by the amount of hemorrhage following the rupture.

At this time or soon after we have a bloody discharge from the uterus.

Tubal or extra-uterine pregnancy might be mistaken for appendicitis or an ordinary uterine abortion and salpingitis, but from careful history and study of the case the correct diagnosis can be made. Treatment, I might say, is surgical, but there is much can be done while waiting for the surgeon to arrive.

If rupture has taken place into the abdominal cavity, there will be profuse hemorrhage and we have but little time to wait. Therefore, put the patient in bed flat on back, arms and legs bandaged to shoulders and hips, ice packs over the abdomen, saline transfusion under breast (fountain syringe will do if we have nothing better), attached to aspirating needle. Also have foot of bed raised and saline by rectum and morphine to keep patient quiet. Adrenaline 20 to 30 M. to pint of saline is useful.

Rupture in other parts are treated the same way, but less heroically.

I will not go into the surgical technique, but to say we should operate in all cases as soon as possible, as we never know when hemorrhage is going to take place even if it has seemingly been stopped.

The three cases which I have seen, two of which were my own, were operated on by myself, one being about six weeks duration and the other about four and one-half months, both patients recovering.

The third I saw while an interne at the Memphis City Hospital, to which I had the opportunity of being the assistant, occurred at full term. The operation being done during shock, the patient died in a short while.

In conclusion, I wish to insist upon a careful diagnosis of each case of suspected tubal pregnancy as early as possible, thereby giving the patient a much better chance of her life.

Tennessee Trust Building.

THE BEST METHODS FOR THE CONTROL OF FEVER. RECOMMENDATION OF RECTAL IRRIGATION.

By WILLIAM LEE SECOR, Ph. D., M.D.,
St. Petersburg, Fla.

Methods for the control of fever have interested the profession from the beginning of medical history, and there is no doubt but that some of the methods that have been used have done more harm than the fever itself would have done. Little thought was given to the question of cause, but the fever itself was considered as something to be combated and conquered by almost any means that would produce a lowering of body temperature.

Because of this erroneous view of the subject, methods of the greatest value fell into disrepute in some quarters and many have been led to ignore measures which, when properly applied, give most excellent results.

Frequently, in consultation, when I have

recommended some hydiatic procedure to the attending physician, I have been met with some such expression as, "But, Doctor, do these baths do any real good; doesn't the temperature go just as high after the bath as before?" True it is that the temperature frequently returns, sooner or later, to the same point that it was before the bath, and it is this observation that has caused those who consider the permanent lowering of temperature the essential element in the control of a fever case, to look with disfavor upon hydrotherapy.

Abnormal rise of body temperature is usually an expression of toxemia, and it is the toxins and not the fever itself that does the harm. We look upon prolonged fever as being very harmful to the nervous system, but is it

not the prolonged poisoning of the nerves by the toxins that cause the fever that really does the harm? The high temperature is simply an expression of the degree of toxemia.

If this is true, there are just two right ways of reducing fever—by getting rid of the source of toxin production and by increasing the elimination of toxins already produced.

From our knowledge of the physiological action of the coal tar products, do they in any way meet either of these conditions? Will aconite or veratrum kill germs or increase the elimination of their toxins?

The source of intoxication is most often found in the intestinal tract, and it is easily proven clinically that bacterial action in the intestines can frequently be largely controlled by thorough cleansing of the whole tract, proper feeding and intestinal antiseptics. While bacterial action may be limited by these methods, it can seldom be entirely done away with.

In increasing the elimination of toxins an agent should be employed that will in no wise be depressing to the vital powers. We have in the cold bath, when properly employed, a procedure that not only does not depress, but is stimulating to the vital centers, and by this stimulation causes an increased output of toxins.

It is this power of increasing toxin elimination to which the cold bath in fever owes its chief value, and the extent of its efficiency depends entirely upon the method of employing the bath. Not that it makes any special difference as to whether a tub bath, sponge bath or some other form is employed, but as to whether the particular form employed is so given as to produce proper reaction, for *reaction is essential*.

If the cold tub bath, commonly called the Brand bath, after Ernest Brand, of Stettin, who first proved its efficiency in the treatment of fevers among the soldiers of the German army, is employed, it is *absolutely essential* that vigorous yet superficial friction be maintained by two or more attendants the whole time the patient is in the bath. It is true that

after any given bath the temperature may return to its former level or even temporarily a little above, yet if the baths be continued regularly you will note that this rebounding tendency grows less and less, and finally when the elimination of toxins becomes greater than their manufacture, the temperature will not return to its former height.

There are a few conditions in which reaction is not desired, then the cold full bath without friction or some other measure that does not favor reaction would be indicated.

Measures like the cold towel rub, cold sponge bath, hot evaporating sponge bath, etc., are more generally useful to the physician in general practice than the Brand bath. It is a mistake, however, to think that the technique of these procedures is unimportant, for upon proper technique will depend your results.

During a recent lecture before senior medical students upon *laryngitis*, I made the statement that the heating compress is a very efficient remedy, and proceeded to describe the technique of the measure, cautioning particularly that the woolen covering should completely cover and overlap the edges of the moist gauze for half an inch. The next day one of the students asked to be excused from recitation, stating that he had tried my compress treatment with the result that he could not speak above a whisper. I asked him to tell me just how he had applied the compress, and was not surprised to find that he had been very careful to have half an inch of the wet gauze project from either edge of the woolen covering.

We as physicians should always bear in mind the fact that any agent that is powerful for good when properly used may be just as powerful for harm when improperly used.

Proper technique in hydrotherapy is very important, and we should not condemn a procedure until we are sure that it has been properly applied.

Practically all of the leaders in our profession are now using hydrotherapy in the place of drug antipyretics. A short time ago Dr.

J. V. Shoemaker, Professor of Therapeutics in the Medico-Chirurgical College of Philadelphia, author of one of our leading text-books on *Materia Medica* and Therapeutics, made the following statement before a body of medical men:

"In olden times the physicians were limited to a smaller number of drugs, and, speaking for myself, the older I become the fewer medicinal substances I employ, although I am a teacher of *materia medica*. The more closely we approach Nature's method in the management of diseases the better for ourselves and our patients. Most of the substances enumerated in our *materia medica* are not actually used. Excessive drugs weaken the vital powers. I wish to point out in this talk that we are called upon to treat fever in the simplest and safest possible way.

"The medical profession has, of late years, like the pendulum of a clock, swung to an extreme in giving powerful antipyretics. We have fallen too much into the habit of using compounds, of which we have little real information.

"The value of water in the treatment of many forms of disease can no longer be overlooked. Its effects are chiefly due to its temperature, although the physical contact of the liquid must have an influence upon all the organs and tissues. These qualities and powers are what we need in the combat against fever. There is no other agent which possesses such a variety of serviceable attributes."

It is not the purpose of this paper to discuss the ordinary hydiatic procedures for the control of fever, but rather to call especial attention to a method not commonly employed and yet of the greatest efficiency.

Sometime ago in a case of typhoid fever with a temperature of 105 degrees, upon which the Brand bath or cold towel rub had little or no apparent effect, I was led, through the writings of Kellogg, to try continuous rectal irrigation with cold water. It worked like a charm and the results impressed me so greatly

that I have used it since that time whenever occasion offered.

From my observations I am led to believe that the same good effects that are obtained from the use of the Brand bath can be secured by the proper use of rectal irrigation. There is a very marked lowering of temperature and an increased output of toxins as shown by the toxicity of the urine and fœces.

I usually employ the cold towel rub in connection with rectal irrigation, but upon several occasions, where there was a persistent high temperature, I controlled it nicely by the irrigation alone. I believe it is the most powerful method that we have for the control of hyperpyrexia.

The technique is simple; either a glass or metal two-way irrigator point should be used. The ordinary rubber douch apparatus found in nearly every home is all right for the water supply and a piece of rubber tubing about three feet long is needed for the waste.

Hang the bag of the fountain syringe about a foot above the level of the patient's body; if it is too high the pressure stimulates peristalsis, and makes the procedure unpleasant. Fill it with water at the desired temperature, let the stream flow a second to free the tube from air, then insert the point carefully and turn on the water. A slight unpleasantness or fullness is felt by some until the flow of the waste is thoroughly established, when it passes and a sense of comfort usually sets in. After one or two irrigations the patients enjoy the procedure.

The length of the treatment will depend upon several factors—the effect produced on the patient's temperature and the temperature of the water employed being the principal ones. The irrigation should be started with water at about 70 degrees F., and if this does not produce the desired result a lower temperature should be employed. I have on one or two occasions of hyperpyrexia in robust subjects used ice water with apparently very good results.

The temperature per mouth should be taken

several times during the irrigation, which I usually continue from twenty minutes to half an hour, and the fact should be kept in mind that we are dealing with a powerful agent and proper precaution should be taken against chilling or collapse. A hot water bag at the patient's feet is usually gratifying.

It is not wise to lower the temperature below 100 or 101 degrees by this means, as there is a tendency for it to still fall somewhat after the irrigation is discontinued, and when the temperature is lowered below 101 degrees there is danger of chilling.

It may be best or even necessary to give a cleansing enema in some cases before the irrigation is begun.

The results obtained from this procedure:

are only in small part due to simple refrigeration, the nerve endings of the rectum and sigmoid are richly supplied with sympathetic connections and it is the stimulation of these nerve endings to which our results are most largely due.

The advantage of this form of procedure over the Brand bath is obvious; the patient lies quietly in bed, often falling asleep during the progress of the treatment, and it may be employed where there are no facilities for using the Brand bath.

Its advantage over the cold towel rub and other measures of that type lies chiefly in that it is more powerful. I believe that it is the most powerful of our hydratic antipyretics.

THE TREATMENT OF SYPHILIS WITH ERLICH'S DIAMIDOARSENOBENZOL (Preparation 606).

By DR. W. WECHSELMANN,
Berlin, Germany.

Translated by Dr. William Litterer, of Nashville, for the Southern Medical Journal from the Dermat. Ztscher., Berlin, 1910. XVII.)

Remedial agents recently introduced for the treatment of syphilis have not been accorded full recognition. This may be due partly to the unpleasant results they have caused so that there exists a temporary mistrust against the use of newer remedies in the therapy of syphilis.

As a matter of fact, the question really is whether such attempts are justified in antagonizing the "traditional" mercury (iodid) treatment in vogue for centuries. In this respect much certainly remains unsatisfactory. It is well assumed that a great, nay, even the greatest, portion of those infected by syphilis are cured by thorough specific treatment, but this is not positively proved, since recurrences have been recorded in chronic cases after the lapse of decades, thereby a criterion is surely furnished that a safe cure has not been established; even Wassermann's reaction is not to be looked upon as absolutely reliable until after tens of years, although it has solved the main

problems of syphilodology. At any rate it is a fact that even with the best specific therapy many cases—more than usually supposed—compare Fournier's work on "Late Secondary Syphilis"—develop secondary and tertiary symptoms of infection, aside from the so-called para-syphilitic diseases, and that no one who has a case of primary syphilis to treat can predict a sure result as to the course of the disease. Hence the endeavor for a better therapy is fully justified. The requisites then which such a remedy must possess are: (1) it should not be more injurious in its effects than mercury, and (2) that it should act more powerfully than the latter upon the symptoms of the disease. Through the systematic examination of many hundreds of such combinations by Ehrlich and his coworkers, we are indebted for the discovery of such a remedial agent. Ehrlich's dichlorhydrate of diamidoarsenobenzol No. 606 meets both requirements positively, as shown by the excellent experi-

ments of Hata, and in this respect is only slightly toxic, since 0.15 per kilo body weight subcutaneously injected into monkeys produced no poisonous effects, and single and much smaller doses promptly destroyed the spirochetæ in rabbits. Naturally this does not hold true in human syphilis, for on the one hand the remedy may act more toxic, and on the other it may not be so effective, since the disease is more virulent in man than that produced experimentally in the animal. Great credit must therefore be given to Alt for the clinical introduction of this new preparation of arsenic—arsenophenylglycina 606—who by his exhaustive research made it possible to place the remedy upon a firm basis and proving its harmlessness by using it first on two colleagues, and afterwards on paralytic subjects before he and Schreiber gave it to syphilitics with excellent results. Likewise Iverson treated recurrent (syphilitic) disease with pronounced results, although he had a case of death in a completely decrepid, luetic and alcoholic female. Notwithstanding this, the possible dangers of the new remedy could not be overlooked when Ehrlich gave the same to me for the treatment of syphilitics, and I convinced myself upon this point in the following case: A miserably nourished infant, dying from Little's disease of probable luetic origin, was given 0.03 by intra-muscular injection without producing any injurious effects, and when the child died several weeks later autopsy showed nothing whatever pointing to arsenical poisoning. Up to date several hundred cases have been treated with the new remedy without mishap, so that the danger of intoxication is only to be considered as slight, for by comparison and correct analysis we find in the literature many cases of severe and even fatal intoxication from the more powerful mercurial treatment, especially the insoluble salts, mercuric salicylate, calomel and the highly recommended gray oil. In testing the cases the author had in view whether or not No. 606 had a favorable effect upon such that did not respond to any treatment whatever. This he

confirmed strikingly, although in the first series of cases the success was not wholly complete owing to the small doses he administered, which later experience proved insufficient.

Case 1.—Male, 18 years, came under treatment in 1906 for malignant syphilis, which remained uncured in spite of calomel injections and Zittmann's decoction. On admission to Virchow's Hospital the clinical history elicited that in October, 1906, he had (kokard form) syphilid upon the body, ulcerative destruction of throat, swelling of the bones and eight deep-seated ulcers, size of a pea, on the under surface of the penis. Treatment: inunction, sajodin, injections of calomel, arsenic (Pil. asiat. and hypodermics), vapor (steam) and sulphur baths and potass. iod. Since February, 1907, he had a temperature of 39 degrees for weeks and the throat had to be insufflated with anesthesin owing to difficult deglutition. During March two courses of inunction. April 28, 1907, portion of efflorescence healed, another granulating, that of the head remaining unchanged. Uvula had dropped off. Zittmann and iodopia. From April 28 to May 7 injections of sublimate. May 23, atoxylin injection 0.2—0.3 with two courses of inunctions. Dismissed June 7, he having refused further treatment. The throat had healed with extensive cicatrices, eruption on skin had disappeared, except some large patches on the glutei. June 12 again entered the *charite* with cutaneous lesions and was given ten injections of atoxylin and six of calomel. In November he entered a sanitarium at Lichtenberg and received thirty-two inunctions, KI and sajodin. The following April *another ulcer appeared on the penis, which gradually enlarged*. He passed back and forth from one hospital to another and finally came under the author's care March 10. Patient was very much run down, having ulcerations size of hand on the inner aspect of thighs and serpigious efflorescence of scalp, thickening of various bones, with infiltration of glands and surrounding fascia. March 13, T. 38.1 de-

grees was given 0.25 Ehrlich's 606 and morphine injections for pain. March 15 and 16, T. 37.5. March 17, T. normal, pain ceased. Healing going on rapidly. March 20, ulceration on scalp and thigh almost healed, that on penis clearing up. April 9, almost well, patient being so restless he could not be kept in hospital for further treatment. One month later he had recovered and gained in body weight.

(Here author gives five other similar cases which Hg. treatment had failed to relieve, but promptly responded to No. 606 in doses ranging from 0.3 to 0.5 gm.)

* * * * *

From these observations it is seen that the general condition improved vastly after the injection, especially so in tuberculous subjects. Even in the first few days, where pain was quite prominent, this was well marked, the patient voluntarily remarking this. Above all, there was increase in the bodily weight, which had temporarily fallen off during the first days following the injection owing to the pains and elevation of temperature. Astounding improvement of the general condition was noticed in the two following cases, which, by the unanimous opinion of those who had them under observation, were doomed to certain death within a short time.

Cases 7 and 8 are of special interest, in which we have sufficient proof of the harmlessness of the new preparation in its effect upon the diseased optic tract. Experiments upon animals have shown that there is no probable danger in this respect. A series of aromatic derivatives of arsenic produce in mice peculiar disturbances of coordination, dance-movements, which Roethig attributes to irritation of the vestibular nerve. He was able to demonstrate a pronounced degeneration of the optic tract in a portion of such animals, and thinks that similar preparations will cause optic disturbances in man.

We may assume that such is not the case with No. 606, since it does not harm the normal retina.* Fehr holds that the damage to

the nerves of sight is due to atoxyl by its anilin constituent. Dr. Fehr, director of the ophthalmic section, has examined the condition of the eyes in all our cases, both before injection and again when discharged from the wards, and only those with healthy nerves of vision received the treatment. He found three cases of optic neuritis in patients of recent syphilis within one week. In the following case, one of our first, this examination was neglected, although we could not obtain the original clinical history in time, we learned afterwards, that is, after the injection was given, she had suffered from optic neuritis for several weeks previously.

Case 9.—F., 24, admitted January 3, 1910, with general papular syphilid. Inunction until 9th. Bilateral optic neuritis and venous hyperemia. . . . Readmitted April 13, with dense large papula-crustiform syphilis covering entire body. April 19, 0.3 No. 606. April 22, crusts falling off. Healing in two to three weeks, up to pigmentation. May 19, ocular condition normal. Steady increase in body weight.

(Here author tabulates cases in both males and females, the action upon primary and the ordinary forms of secondary as well as recurrent syphilis.)

Hereditary lues of infants deserves special consideration. Only such were selected for treatment that gave little prospect of living very long. They were cases of pemphigus syphiliticus neonatorum, a form of the disease in which the internal organs are so permeated by spirochetæ that they die, with or without treatment. We succeeded in curing two such cases; three others died a few days after injection, although the skin lesion disappeared, fever and anemia supervened; in the other case opisthotonos set in. Autopsy revealed in one case diffuse miliary gummata of the liver, in the second the same condition in the heart, and

*Remark: That such is the case in a damaged retina we are not in position to state with certainty; it is possible that this membrane having been previously injured through atoxyl, may suffer from the application of No. 606.

the third one had pectathropy, but in none signs of arsenical poisoning. Life is highly endangered in these severe cases of syphilitic infants since they are deprived of the mother's breast. Three further cases, not so severely affected, also died; one had received no treatment whatever, the others were subjected to the Hg. cure. Two more also died before the injection could be given, one from unexplainable fever, the other from pemphigus.

It is quite possible that the rapid solution of immense quantities of spirochetæ by the administration of No. 606 liberates such an amount of endotoxin that the temporary reaction is too great to be overcome by the weakened organism of the child. The dosage should be carefully regulated and only such cases be subjected to treatment which are properly nourished.

(Cases 50 to 54.)

Dr. Sieskind reports on the behavior of the spirochetæ; Dr. Lange on Wassermann's reaction, and Prof. Lockemann on the excretory process through the kidney.

Since the above, twenty-one cases have been treated with doses of 0.55 without accident.

From these observations and the experience of other investigators, embracing several hundred cases, it will be seen that Ehrlich's remedy has no toxic effects in the doses thus far employed. No deleterious action was noticed upon the gastro-intestinal canal or the heart, and no excretion of albumen or sugar. Dr. H. Hirschfeld examined the blood carefully. He found no changes except a slight increase in leucocytes in a few isolated cases. Still it is not improbable that occasionally hypersensitiveness may occur from by-effects and further experience will teach us to be cautious as to the risks of a remedy of such potency. Every intelligent patient will readily submit to its use after plain explanation of its value, for from a most skeptical point of view it is clear that this new remedy is far superior in its curative action upon the symptoms of syphilis than the agents hitherto employed. The rapidity of its results is clearly seen after a

single injection in primary as well as the usual secondary manifestations, roseola, papules, plaques, scleradenitis, but more astonishing is its cure in the malignant, tertiary and visceral forms (syphilis of the testicle, cephalalgia and epileptic conditions), and even borders on the marvelous in its effect upon those cases which have resisted all former treatment. It is especially advantageous by its favorable action upon the general condition in tuberculous subjects, in whom mercury is of doubtful service, as noticed in several of our cases. Relapses have not been observed, though the period of treatment is too short. Our oldest cases were two children under continuous observation for three months. This question, and whether the remedy can cure the disease at one stroke, must be answered by future continued investigation. We are under the impression, however, that the doses thus far employed are not sufficient for all cases, and its action seems to be more important in the malignant forms than in papular syphilide. We are dealing with a remedy which is decidedly destructive to the spirilli, and whilst they are always present in the malignant forms, they are not found in great abundance. The full effects, i. e., *complete sterilization*, very likely depends upon the dose, hence we increased the same to 0.45 in women and 0.50 in men. No toxic symptoms arose. From experiments on animals, Ehrlich thinks that rapid or slow disappearance of the spirilli depends upon or corresponds exactly with the dose given, and when spirochetæ are found the day following the injection the amount given was not enough and the dose should be repeated, as was successfully done in a child (case 50 of Janecke). In other isolated cases in which we had most brilliant results from the remedy, mercurial treatment was continued in order to destroy any possible latent spirochetæ.

Possibly also in those cases which give the Jerisch-Herxheim reaction the dose is too small to kill all spirochetæ and the phenomena seen is an expression of biologic excitation produced by the small dose of the remedy.

Regarding the technic, we usually dissolved the dose required, 0.25 to 0.5 in a little methyl-alcohol, then added 10 c. c. sterilized distilled water, then slowly added 1.5 to 2.0 to 10 c. c. 1-10 normal sodic hydrate and water up to 20 c. c. Sometimes only 10 c. c. of water were used, in part also without solution in methyl alcohol. Latterly we filtrated the fluid with phenolphthalein neutralized as nearly as possible with sodic hydrate, and this somewhat cloudy mixture was injected and appears to have caused less pain. After injection the skin is painted with tr. iodin. Injection is made slowly into the glutei muscles, as far as possible from the site of the sciatic nerve. It is not very painful and many do not complain at all. In many the canula was first inserted and 0.02 novocain injected, followed by the remedy through the same canula in from five to ten minutes. In these there is hardly any pain. Whilst the pains are severe, they are bearable, and vary with the individual, setting in generally after several hours, sometimes one or two days later, and continue for about three days, then gradually subside. Narcotics and morphin hypodermically will be of aid. From the first to the third day the temperature will rise, though not always, to 38 or 39 degrees, the general condition remaining good. Occasionally tense edema is noticed and a moderately hard, diffused infiltrate, lasting from eight to ten days. In only one instance without pain or fever, a softening set in on the fifteenth day, which was punctured and purulent contents evacuated. No local treatment was used except to cover the genital papules with physiologic salt solution.

After all this, it is evident that Ehrlich's remedy is a very valuable addition to our medical armamentarium, and that Ehrlich's genius has won a great battle in the fight against syphilis. It is the task of future labor to establish and determine the exact indications and contra-indications of this new cure. Then we may hope that with time the genial idea of Ehrlich to combat syphilis by one stroke, by complete sterilization, will be an accomplished fact.

Spiratchetae. Findings in patients injected with Ehrlich's preparation No. 606. By Dr. R. Sieskind.

Systematic examination in the dark field for spirochetæ was made in thirteen cases that had been injected with No. 606. The infectious matter was taken from the papular irritative secretion about the vulva, which experience has shown to be rich in spirochetæ. Other specimens were obtained from sclerotic secretions. According to the table following we noticed that the spirochetæ disappeared at the latest on the sixth to seventh day, and in one (case 24) they could not be detected on the following day. In those cases in which the spirilli disappeared rapidly, a prompt and distinct involution of the papules and scleroses was noticed as early as twenty-four hours, and corresponded to the clinical recession of the syphilitic appearances, seen upon removal of the excrudescences by a scalpel. In many cases there was well marked change in the spirochetæ after the injection as viewed in the dark field. The usual screw-like or spiral movements were noticeably diminished, often only slight oscillation, gradually subsiding altogether. Not only was their motility changed, but also the form. That form of spirochetæ termed "pallid," on account of their delicate structure and faint reaction to light, became plump and swollen. The contour, however, was still preserved in this motionless state. On the whole, the impression is that Ehrlich's arsenical preparation acts as a specific upon the spirochetæ.

(Case 15, etc.)

From private information by Ehrlich, similar observations were previously made by Ascoli, Truffi and Passini.

* * * * *

The behavior of Wassermann's reaction in cases of syphilis treated by Ehrlich's No. 606. By Dr. Carl Lange.

In the comparative value of the various methods of treatment of syphilis aside from the observance of the clinical course, Wassermann's reaction plays an important role, and

here we have to take into consideration the same difficulties which present themselves in the critical valuation encountered in the mercurial treatment. Aside from the value which may be attributed to the fact that a positive reaction becomes negative after treatment we may hope to gain points of support, first, from the percentage of cases that become negative and, second, from the various periods of time when negative reaction sets in; third, by the curve of the course of the reaction-power, wherever such regularity can be observed. Alt was the first one to demonstrate the negative reaction of Wassermann after treatment with No. 606.

In this sense the main value lies in the fact to examine the same serum as frequently as possible in order to establish as near as can be done the point of time when negation sets in, and the sera were always treated with the same doses of extract so as to follow closely the reactive strength. In the greater number of blood extractions the incisions were made into the finger-tips for frequent examination, and where the amount of serum was very slight. Weidanz' method (Mulzer) was used, which after sufficient parallel tests gave just as correct results as the original method. In addition, these sera were at once utilized upon withdrawal from the patient.

With regard to the method employed, it should be specially noted that the examinations as made in our laboratory were according to Wechsellmann by using barium sulphate instead of heat to produce inactivity. This was found to be very important in the following case in which Wassermann's reaction was marked by complementary stoppage in the serum which had been treated by mercury and showed only apparent negative reaction. We regard a negative reaction after Wechsellmann's method of more value since the complementary stoppage (plugging) in the mercurial treatment differs from the conditions met with in Ehrlich's cure.

(Table I and others on pp. 482 and 483 are omitted.)

Of the 51 cases examined, only about one-third are really to be considered, which, as will be seen, all turned out negative. The cases showing negative results which were of no value were such as had previously reacted negatively and those cases which were under observation for less than four weeks.

The 17 cases which became negative showed a certain regularity both with regard to the period of time when reaction set in and reaction curve, so that further investigation on these points at least show nothing particular.

* * * * *

The beginning of the negative reaction ranged between one and seven weeks, apparently a great interval. If we arrange the cases, not as to the severity of the clinical symptoms, but according to the initial strength of reaction before treatment, it will be seen that in our material examined a striking contrast exists in the time of the appearance of negative reaction and the initial strength of reaction.

The decrease in reaction strength down to negation, which at first was uniform, was regular throughout; irregular fluctuations between positive and negative conditions were not observed, as is claimed by many in the reaction in mercurial treatment. All the sera which became negative remained so, but this naturally holds only for a relatively short period of time of observation.

Although these results are gathered from very few complete examinations, we still see that most of the cases became negative after four weeks, where the period of observation was sufficiently long. Those under four weeks cannot be here included. The time of the appearance of negative reaction depends upon the initial strength of reaction before treatment was begun. The reaction strength (reactive power) decreases in uniform curve without marked, irregular fluctuation.

It cannot be stated with certainty if we have herein a substantial difference from the injection treatment, since we did not have at our disposal for similar routine examination

the sera of cases treated by mercury, but we think this is improbable in spite of our quite abundant results of the examinations made. It remains to be seen how Wassermann's reaction will turn out in further course of observation.

BIBLIOGRAPHY.

The following will be found the most important articles on Ehrlich's 606. References are also made where these articles are abstracted in the medical journals of the United States, as well as their editorial comments.

Alt, K. Das neueste Ehrlich-Hata-Präparat gegen Syphilis. *Munch. med. Wochenschr.*, March 15, 1910, p. 561.

Bohac, K., and Sabotka, P. Ueber unerwünschte Nebenerscheinungen nach Anwendung von Dioxy-diaminoarsenobenzol 606 Ehrlich-Hata. *Weiner klin. Wochenschr.*, Vol. 23, pp. 1099 and 1131 (July 28 and Aug. 4, 1910).

Ehrlich, P.—Chemotherapie von Infektionskrankheiten. *Zeitschr. f. artz. Fortbildung*, Vol. 6, p. 721 (1909). Describes Ehrlich-Hata experiments on animals.

Ehrlich, P.—Ueber Blasenstörungen nach Anwendung des Präparates 606. *Weiner klin. Wochenschr.*, Vol. 23, p. 1131 (Aug. 4, 1910).

Ehrlich's New Remedy for Syphilis (Editorial and Comments). *Jour. Amer. Med. Assoc.*, Vol. 55, pp. 601, 609, 610 and 617 (Aug. 31, 1910).

Ehrlich's "606" (Editorials). *New York Med. Journ.*, Aug. 20 and 27, Sept. 3 and 17, 1910.

Fischer, P., and Hoppe, J.—Verhalten des Ehrlich-Hataschen Präparates, in menschlichen Körper. *Munch. med. Wochenschr.*, July 19, 1910.

Glück—Kurzer Bericht über 109 mit "606" behandelte Luesfälle. *Munch. med. Wochenschr.*, Aug. 2, 1910.

Hoffman, E.—Behandlung der Syphilis mit dem neuen Ehrlich-Hataschen Arsenpräparat. *Med. Klin.*, Aug. 14, 1910; Abstract in *Journ. Amer. Med. Assoc.*, Sept. 17, 1910, p. 1062.

Isaac.—Ergebnisse mit dem Ehrlich'schen Präparat. 606. *Berl. klin. Wochenschr.*, Aug. 19, 1910. Abstract in *N. Y. Med. Journ.*, Sept. 17, 1910, p. 590.

Iversen.—Ueber die Behandlung der Syphilis mit dem Präparate "606." *Munch. Med. Wochenschr.*, Aug. 16, 1910, p. 1723. Abstract in *N. Y. Medical Journ.*, Sept. 17, 1910, p. 59.

Iversen, J.—Ueber die Wirkung des neuen Arsenpräparates (606) Ehrlich's bei Rekurrens. *Munch. Med. Wochenschrift*, April 12, 1910.

Meltzer, S. J.—Ehrlich's Remedy for Syphilis. *New York Med. Journ.*, Aug. 20, 1910, p. 371.

Michaelis.—Die subcutane Anwendung des Ehrlich-Hataschen Syphilispräparates. *Berl. klin. Wochenschr.*, Aug. 15, 1910. Abstract in *N. Y. Med. Journ.*, Sept. 17, 1910, p. 591.

Michaelis, L.—Ueber die Anwendung des Ehrlich-Hataschen Syphilismittels in neutraler Suspension. *Berl. klin. Wochenschr.*, July 25, 1910, p. 1401. Abstract in *New York Med. Journ.*, Aug. 27, 1910, p. 435.

Neisser, A.—Ueber das neue Ehrlich'sche Mittel. *Deutsche Med. Wochenschr.*, Vol. 36, p. 1212 (June 30, 1910). Abstract in *Journ. Amer. Med. Assoc.*, July 23, 1910, p. 326.

Neisser and Kuzilitzky.—Ehrlich's Arsenobenzol. *Berl. klin. Wochenschr.*, Aug. 8, 1910. Abstract in *New York Med. Journ.*, Sept. 17, 1910, p. 590.

Nichols, H. J.—Note on the Action of Ehrlich's Substance 606 on *Spiracheta Pertensis* in Animals. *Journ. Amer. Med. Assoc.*, vol. 55, p. 216 (July 16, 1910).

Organic Arsenic Preparations; Ehrlich's 606 (Editorials). *Journ. Amer. Med. Assoc.*, Vol. 55, pp. 949, 951 (Sept. 10, 1910).

Schreiber and Hoppe.—Ueber die Behandlung der Syphilis mit dem Neuen Ehrlich-Hataschen Arsenpräparat. *Munch. Med. Wochenschr.*, July 5, 1910, p. 1430. Abstract in *New York Med. Journ.*, Aug. 13, 1910, p. 339.

Taegle.—Erfolgreiche Behandlung eines syphilitischen Säuglings durch Behandlung seiner stillende Mutter mit "606." *Munch. Med. Wochenschr.*, Aug. 16, 1910. Abstract in *New York Med. Journ.*, Sept. 17, 1910, p. 591.

Treupel, G.—Erfahrungen und Erwägungen, mit dem neuen Ehrlich-Hataschen Mittel bei syphilitischen und meta-syphilitischen Erkrankungen. *Deutsch. Med. Wochenschr.*, July 28, 1910. See editorial in *Journ. Amer. Med. Assoc.*, Aug. 13, 1910, p. 601.

Wechselmann, W.—Treatment of Syphilis with Ehrlich's 606. *Berlin klin. Wochenschrift*, Vol. 47, p. 1261 (July 4, 1910). Main points in this article summarized in the *Journ. Amer. Med. Assoc.* (See references under title Ehrlich's New Remedy for Syphilis.)

Wechselmann, W. and Lange, C.—Technik der Injektion des Dioxy-diamido-arsenobenzol. *Deutsch. med. Wochenschr.*, July 28, 1910. See editorial in *Journ. Amer. Med. Assoc.*, Aug. 13, 1910, p. 601.

Southern Medical Journal

NASHVILLE, TENN.

OCTOBER, 1910

Published monthly at 150 Fourth Ave., North, by
The Southern Medical Journal Publishing Co.

For other information see page XI. of advertisements.

WHY NOT TAKE ANOTHER STEP IN THE PREVENTION OF TYPHOID FEVER?

So much has been done by the health authorities, the profession individually, the press and the laity in preventing typhoid fever, that encouragement is offered in redoubling our alertness and increasing our activities in the prevention of this dreadful malady. It is indeed a herculean task, but we must not falter nor turn back until it is practically wiped from the face of the earth. We no longer recognize in it the ministrations of Providence, but the knowledge of its cause and methods of dissemination have armed us with weapons that if properly utilized have been and can be even more effective.

Shall we let them lie inactive in our grasp? The first step that every physician should insist upon with almost fanatic fervor is the destruction of the typhoid germ in the excreta from the patient of every known and suspected case. It can be certainly destroyed by carbolic acid, lime, boiling water, etc. It should be our unswerving attitude in every single instance to have this rigidly carried out.

The prevention of pollution of our drinking water has reached a widespread concerted action. Pending its perfection and compulsory efforts at destruction of the germs as they are discharged from the patient, can we

not by legal enactment destroy our arch enemy, the house fly? This mode of conveyance has gradually dawned upon us as being perhaps one of the most frequent, insidious and ever-present factors in the dissemination of this murderous disease. It is all well enough to advise persons to live in screened houses, but why not compel them to screen all earth closets and manure heaps and thus destroy the principal breeding place? If this were done universally it would be simply astonishing to contemplate the tremendous results which would ensue upon its adoption.

Municipalities compel vendors to screen food supplies, and while there would be, of course, considerable opposition to so sweeping a compulsory law, it is, so far as the writer is aware, the first suggestion of a law requiring earth closets to be screened, yet it is believed that it can be accomplished, because it is right. There is no gainsaying its wisdom and effectiveness. The details, of course, would have to be worked out. The General Assembly could so frame a law, if properly prepared by our health authorities, that no unseemly hardship would be worked upon anybody. The expense would be the slogan against it, but the results would richly reward the expenditure. Let the cost fall upon the landlord. The renter will, of course, have to pay for it in the end, but could he expend the residue of his scanty earnings in any better possible way? If he only knew the priceless value of the prevention of a single case of typhoid fever in his family, he would be an ardent advocate of the proposed plan. Those who have had the catastrophe of a typhoid epidemic, or even an isolated case in their household or family circle, would certainly not oppose it. It is our duty to acquaint the pub-

lic with the facts. Why can't this propaganda be embodied in a uniform law to be presented to the respective legislative bodies at their next assemblage, at least in our Southern States?

This always brings us back to our great hope and aim, that of having a National Bureau of Public Health. Whenever the Federal authorities take hold of the situation, how effectively they handle it! Take for an instance the seemingly unattainable health conditions now prevailing in the Panama Canal Zone. Think of the cleaning up of Havana, to say nothing of our beautiful Crescent City. Why cannot these beneficences be extended to our communities? Is life so cheap that we can longer afford to be deaf to the crying need for these preventive measures? Let us not relent in our effort to educate the public. *Vox populi, vox dei*, and yet the voice of the people has never been raised as it should be in one overpowering demand for protection against the death-dealing diseases which are greater than all the glittering armaments of the world.

W. D. H.

"DOCTOR" CRIPPEN, A QUACK.

The notorious crime of Dr. Crippen, which British justice has summarily dealt with and for which he will soon pay the extreme penalty, has not only shocked the world but chagrined the medical profession. It should be understood, however, by all medical men that this unfortunate criminal was not a regular physician and, therefore, that our profession should not suffer the contumely which it would necessarily feel if one of its regular members had committed so atrocious a crime. According to the Journal of the A. M. A., Dr. Crippen has been a quack all of his pro-

fessional life. He graduated from a Homeopathic College, in Cleveland, Ohio, in 1884, and after that lived in Detroit, San Diego, Cal., New York, Philadelphia, Paris and London. In Philadelphia it appears he was in the employ of "Professor" Munyon and it is reported that he managed those remedies in England. He has also been a notorious quack in association with a man by the name of Derry, who ran an "Institute" in Paris of a quack nature which advertised to cure deafness by some mixture. He was associated with another quack by the name of Drouet, in Paris, who was the "physician" for this concern. A branch office was afterwards opened in London with the title "H. H. Crippen, M. D., (U. S. A. 1884)" It did not seem to thrive as much, however, as the Paris institute did and later Crippen conducted what was known as the Aural Remedies Company, in London. This treatment was called by him "absorbent" and was similar to the nefarious practices of the former institute, which Judge Matthew, of the English bench, called "a disgraceful institution carried on for unworthy objects by discreditable means."

The inhuman crime of which Crippen was so speedily adjudged guilty by the promptness of British law courts, in contrast to our own dilatory legal methods, is only a culmination of his immoral life. A man who preys on the misfortunes of his fellow creatures and ekes out a subsistence by defrauding them must of necessity have that degenerate type of moral instability for which the gravest crimes are only a sequential culmination.

It is a relief to know that he has always been a quack and it gives a certain sort of

satisfaction to know that his "sin has found him out."

STUDENTS' HOME-COMING DURING THE SOUTHERN MEDICAL AS- SOCIATION.

It has been planned by the Alumni Associations of both the universities in Nashville to have a reunion of their respective alumni during the meeting of the Southern Medical Association. It is expected this will be the largest medical gathering that has ever occurred in the South, and inasmuch as a very considerable number of the practitioners in this section are alumni of the medical colleges of Nashville, it will afford an unprecedented opportunity for their reunion. It is estimated

that the attendance from the State of Tennessee alone will be in the neighborhood of five hundred. Aside from the interesting work of the sections on medicine, surgery and ophthalmology, it is understood that the President of the American Medical Association, Dr. Wm. H. Welch, will be in attendance, as well as the President-elect, Dr. J. B. Murphy, of Chicago. Everything points to a phenomenal meeting, and accordingly a great many of the former students of Nashville will avail themselves of the opportunity to visit their alma mater during this meeting. The details of the reunion will be announced by those who have the matter in charge, and it is predicted that this home-coming will be one of the most delightful incidents of the meeting.

BOOK REVIEWS

A TREATISE ON DISEASES OF THE EYE. By John E. Weeks, M.D., Professor of Ophthalmology in the University and Bellevue Hospital Medical College (Medical Department of New York University). Cloth. Price, \$6 net. Pp. 944, with 553 illustrations. Philadelphia: Lea & Febiger, 1910.

The long expected work of Dr. Weeks on "Diseases of the Eye" has been given to the profession. Much was expected of this eminent leader, and even a cursory glance through the volume will convince one that the confidence was merited.

In his preface Dr. Weeks modestly states that it is the design of the author to produce a treatise on ophthalmology that will enable the undergraduate to obtain a sufficiently comprehensive and trustworthy knowledge of the subject, a book to which the practitioner of medicine may refer for information regarding questions concerning the eye, and also a book which may be of use to the specialist in ophthalmology.

The entire first chapter is given up to the embryology of the eye. The process of development is beautifully illustrated by plates, as is the following chapter upon the anatomy. The author fully appreciates the value of these two subjects, a knowledge of which is of such importance in rightly interpreting the pathology of the eye.

One is struck with the prominence accorded the bacteriology of the eye. The micro-organism of every pathological condition is carefully described and its appearance illustrated by splendid plates. A plate from drawings by Dr. K. Lindner, of Vienna, shows the trachoma micro-organism of Halbertadter and Prowazek in its various stages, though the author is careful to say that the body has not been proven to be the cause of trachoma. A chapter is given to the preparation of specimens for diagnosis in the search for micro-organisms. Full instructions are given for the collection, cultivation and staining of the different pathogenic organisms.

Almost thirty pages are given to the operative treatment of cataract, as befits its importance. The removal of the lens in its capsule is described only to be condemned except in cases of subluxation and complete dislocation. It is described as permissible in hypermature, shrunken, and in Morgagnian cataract.

A chapter is given to the relation of the throat, the nose and accessory sinuses to the eye. A very just comment is made on the marked connection noticed between phlyctenular keratitis and adenoid growths in the pharynx.

The chapter upon Toxic Amblyopia and Amaurosis, while tersely written, is particularly complete.

If one could characterize the book, one would say that it is eminently American. There is a notable absence of theory and a preponderance of practical instruction in diagnosis and treatment. The American desire for results is apparent, and as it conduces to the good of the patient, it is certainly a pardonable national trait.

The volume contains more than 900 pages with 25 full-page plates and 528 engravings. The press work and paper are excellent.

To the student, the general practitioner and the ophthalmologist it will be of invaluable assistance.

M. M. C.

SOME POINTS IN THE SURGICAL ANATOMY OF THE TEMPORAL BONE. Arthur H. Cheatle, F. R. C. S., Aural Surgeon to King's College Hospital; teacher of Otology in the University of London; late Hunterian Professor at the Royal College of Surgeons of England. J. & A. Churchill, London.

This work comprises the Hunterian lectures delivered by the author at the Royal College of Surgeons in 1906.

They are based upon the sections of 525 temporal bones in the author's private collection. This collection is said by Prof. Dench to be the finest collection of temporal bones in the world, not excepting that of Politzer.

By special invitation the distinguished author brought the collection to New York and lectured before the section on Otology of the New York Academy of Medicine. The editor's purpose in reviewing this work is to call attention to the fact that Mr. Cheatle has demonstrated the fallacy of much of our teaching in regard to the pathology of the temporal bone.

During operation on the temporal bone for chronic suppuration we have all encountered cases of ivory-like hardness associated with a small and deeply placed antrum and an absence of cellular structure. We have been taught that this condition is a process of eburnation due to long continued suppuration.

Mr. Cheatle shows that this condition is present in 20 per cent of all normal mastoid bones and conforms to what he calls the infantile type of mastoid. In other words, they retain throughout life the characteristics of the mastoid as seen in infancy, an outer layer of compact bone and an inner layer of fine cells. Practically the only difference is that in the adult the outer layer of compact bone is greatly increased in thickness. The infantile type is characterized by the absence or scarcity of cells in other parts of the bone than the mastoid region. There is no external sign to show when this type is present, and Cheatle says that the statement of Kanasugi that "in general small short processes are dispoetic and large ones pneumatic," cannot be relied on. The antral wall is often of great thickness as well as density in these infantile types. The greatest depth found in any of the specimens was $\frac{3}{4}$ of an inch. "A forward lateral sinus is usual and is found much more frequently and to a much greater extent than in the cellular type. The sinus often comes well forward below the level of the antrum and may reach the posterior meatal wall or it may even dip in between the cavity of the antrum and the surface." The surgical importance of this type of mastoid is "that acute suppuration can exist in the antrum without any signs behind the ear, as it is impossible for pus to penetrate

the outer antral wall or reach the mastoid process, and there is great liability for further serious extension, especially to the posterior fossa if the posterior antral wall is very thin. If intracranial or labyrinthine infection does not occur there is a great chance of the suppuration becoming chronic. The lining membrane of the antrum undergoes destruction and degeneration or some local destruction of part of the bony walls or ossicles takes place and causes a chronic discharge from the middle ear tract." Mr. Cheatle says: "In my opinion the anatomical conditions seen in the infantile types are factors in producing chronic suppuration and the dense outer wall is one of the factors and not a result."

Every Otologist who can should personally visit this great collection, not only to study the astonishing variations which may take place in the anatomy of the temporal bone, but to receive the inspiration of contact with the great mind which has given its best years to the work of preparing these specimens. It is such work as this that portrays the true scientific spirit and to which every member of the profession should pay homage.

The book contains 112 life-size plates illustrating every variation of the anatomy of the temporal bone and descriptive text dealing with all the operations which are performed upon it.

M. M. C.

The American Red Cross Abridged Text-Book on "First Aid," just from the press of P. Blakiston's Son & Co., Philadelphia, is a little book of great value to all students of first aid. Certain facts are set out in a concise way, and in a manner to be readily grasped by industrial workers, for whom this edition is especially intended. It is compiled by Major Charles Lynch, Medical Corps, U. S. Army, and First Lieutenant M. J. Shields, Medical Reserve Corps, U. S. Army. Prepared for and endorsed by the American Red Cross. (169 pages, illustrated. Price 30 cents.)

PHARMACOLOGY AND THERAPEUTICS, OR THE ACTION OF DRUGS. By Arthur R. Cushny, M.A., M.D., F.R.S. Fifth Edition. Thoroughly Revised. Pp. 744. Published by Lea & Febiger, 1910.

This latest edition of an already authoritative work is a thorough revision rendered necessary by the recent rapid progress in the field of experimental therapeutics. The latest reliable laboratory and clinical findings in pharmacology are here embodied in a readable form, while the uses of drugs receive the same careful consideration, and in many instances are discussed in the light of the more improved methods of clinical examinations, giving the newer applications of remedies wherever justified by results.

The many recent important researches and the rapidly growing interest in this formerly much abused and discredited branch of medicine are enough to make such a work especially appreciated at this time by all who desire to know more of the action and uses of remedial agents than is found on the average proprietary label. Among other new features of this edition is a short chapter on the antitoxins and their uses.

The book is a most valuable one both to the progressive practitioner and to the laboratory man.

R. W. B.

DUODENAL ULCER. By B. G. A. Moynihan, M.S. (London), F.R.C.S. Published by W. B. Saunders Company, Philadelphia.

Mr. Moynihan entered into the study of duodenal ulcer as a pioneer ten years ago, and it has been largely through his work that present knowledge of the diagnosis and treatment of this lesion have been placed on a sound scientific basis. This text deals with the results of Mr. Moynihan's personal work and with that of other surgeons, clinicians and pathologists who have contributed to knowledge of the subject. The field is new, but it has been thoroughly covered, and little remains, it

would seem, to be settled concerning this condition, which a few years ago was considered very rare and is now demonstrated to be very common. After covering the various phases, from History to Treatment, the author gives in detail a complete list of his cases to the beginning of the year 1909, so that one may study them and determine whether the premises justify the conclusions drawn in the text. The author has shown that many of the usual diagnoses, such as indigestion, gastralgia and such like, are due to ignorance of the pathology present, namely, duodenal ulceration, and that the symptoms are relieved by treatment of this lesion. Not only does the author claim in his book that duodenal ulcer is not a myth, but a demonstrable condition; in actual practice he lives up to the claim, showing to the satisfaction of visitors that ulcer actually is present.

The field is a new one and the teaching of Mr. Moynihan contradicts much that the profession have been taught in their days of education, and is contrary to the present opinions of many active workers. The book has been prepared by a master, who has given the whole of the details, enough to convince the most skeptical; and must be accepted as one of the large contributions to the literature of nineteenth century surgery.

W. A. BRYAN.

MANUAL OF TROPICAL MEDICINE. By Aldo Castellani, M.D., and Albert J. Chalmers, M.D., F. R. C. S. Published by Wm. Wood & Co., New York. Pp. 1242.

This is the most comprehensive as well as valuable book along this line I have ever read. It deals with all the subjects pertaining to Tropical Medicine in a most exhaustive, but not tiresome manner. In Part I they deal with the "History of Tropical Medicine;" Part II, "The Causation of Diseases in the Tropics;" this part of the book being further divided into sections which deal with the physical, chemical and biological causes. Part III deals with "The Diseases of the

Tropics." Section A of this part is devoted to the fevers; section B to general diseases; section C to systemic diseases.

This volume contains the most complete list of illustrations one will be able to find along this line. There are 1,163 of these illustrations, each being plain and well reproduced, giving each and every author proper credit and due note. We also find sixteen colored plates in this book of the most important things, as "Malarial Parasites," "Anopheles Maculipennis Meigen," both male and female, and "Stegomyia Calopus Meigen," as well as "Tinea Nigra-circinata" and "Tinea Imbricata."

Two diseases that we have read much about of late, namely, uncinariasis and pellagra, are well taken care of in a clear concise manner and deserve especial mention, especially the treatment of uncinariasis and the etiology of pellagra.

At the end of each chapter is to be found a list of references that is most complete, giving each man due credit for the work done on any subject mentioned in this book. It has a complete and well arranged index, which is to be followed by a list of authorities of eighteen pages, with a reference to the page on which each man's views are expressed.

Some chapters in this volume should have especial mention, the first one being Malaria, in which they deal with it in a masterly way from every phase of the subject as seen by them in Africa and Asia. They discuss the regular as well as many irregular forms very extensively. Their classification as subtertian or that caused by laverania malariae are as follows: (1) "Simple subtertian fever; (2) Double subtertian fever; (3) Irregular subtertian fever; (4) Remittent subtertian fevers; (5) Bilious remittent fever; (6) Pernicious subtertian fevers." Under these pernicious subtertian we find a further division with a full description of each, viz.: (A) "Pernicious Fevers Without Local Symptoms"

(algid, diaphoretic, hemorrhagic and scarlatiniform), and (B) "Pernicious Fevers with Local Symptoms," as cerebro-spinal, gastro-intestinal, cardiac and pulmonary.

Every possible means of combating it is fully discussed under treatment. Quinine, bihydrochloride, is strongly advocated intramuscular or cutra-venously in all pernicious cases.

In the chapter on Relapsing Fever we find several different types as the European type caused by spirochaeta recurrentis, the American by S. Noyi, the African by S. Duttoni, while that in India is due to S. Carteri. These are all taken up separately and discussed fully. Many other fevers are considered fully, as yellow fever, trypanosomiasis, etc.

In the book I note the prognosis of sleeping sickness is much better since the beginning of atoxyl treatment, according to Manson's method, which is to give two or three grains of atoxyl by intramuscular injection

every second or third day for at least two years.

Any one who is interested in tropical medicine cannot afford to be without this book, and as we are becoming more and more in touch with the tropics yearly it behooves all of us to acquaint ourselves as much as possible with the diseases of the tropics.

O. N. B.

BOOKS RECEIVED.

Anatomy, Descriptive and Applied. By Henry Gray, F.R.S., late lecturer on Anatomy at St. George's Hospital, London. New (18th) edition, thoroughly revised, by Edward Anthony Spitzka, M.D., Professor of Anatomy in the Jefferson Medical College of Philadelphia. Imperial octavo, 1,496 pages, with 1,208 large and elaborate engravings. Price, with illustrations in colors, cloth, \$6.00, net; leather, \$7.00 net. Lea & Febiger, publishers, Philadelphia and New York, 1910.

ABSTRACTS OF CURRENT LITERATURE

"THE CULTIVATION OF THE TUBERCLE BACILLI DIRECTLY FROM SPUTUM BY THE USE OF ANTIFORMIN.

The cultivation of tubercle bacilli directly from the sputum has never been an easy task, write Lawrason, Brown and Smith in the June number of *Journal of Medical Research*, 1910. Their experience with the use of antiformin in obtaining pure cultures of the tubercle bacilli directly from the sputum in nine to twelve days may prove to be of interest.

The technique is very simple. Antiformin, first described by Uhlenhuth, consisting of equal parts of Javelle water and a fifteen per cent watery solution of sodium hydrate, was used to dissolve the mucus and to destroy the secondary organisms. Equal parts of a thirty per cent solution of antiformin in water and of sputum were thoroughly mixed in a sterile

tube and allowed to stand at room temperature for one hour. The tube was then centrifugalized, the supernatant fluid decanted and the sediment mixed with sterilized distilled water. This was again centrifugalized and the whole process was carried out three times. The sediment was then streaked over the surface of Dorset's egg medium, and placed in the incubator. The medium employed by them was prepared as follows: The shell of the egg was sterilized, the white and yolk thoroughly mixed, sterilized distilled water equal in amount to twenty-five per cent by volume was added and after slanting in tubes, avoiding bubbles, it was coagulated in the ordinary blood serum coagulator by heating on three successive days to 85 degrees C.

The results of the observations show that it is easy to grow tubercle bacilli directly from

sputum upon the egg medium, easy to transfer them to other media, but difficult to grow them directly on blood serum or glycerin agar. The fact that the egg medium contains considerable lecithin, that the antiform affects strongly the staining peculiarities of the tubercle bacillus (lessening its resistance to decolorization by acids) and that it is difficult to grow them upon blood serum or glycerin agar, would suggest that the waxy content of the tubercle bacillus has much to do, not only with its resistance to bactericidal substance, but with its inability to grow on ordinary media. The method affords, of course, a ready means for freeing a culture of tubercle bacilli from contamination and of preparing an homologous vaccine for any patient in a comparatively short time. The method is far superior to that of Hesse, who employed a medium containing Heyden's Nahrstoff.

Their results may be briefly summarized as follows: Fifty specimens of sputum were studied. Of these, thirty-five contained on microscopical examination at time of inoculation of culture media, tubercle bacilli in varying numbers, and in fifteen no tubercle bacilli were found. Positive cultures were obtained in thirty-three (ninety-seven per cent) of the thirty-five specimens in which tubercle bacilli were found and in four (twenty-seven per cent) of the fifteen specimens in which no tubercle bacilli were found, though also, in these four cases, bacilli had at some other time been found.

In the two cases which showed tubercle bacilli upon microscopical examination and with which we failed to grow cultures, the attempt was repeated. The first instance showed tubercle bacilli upon microscopical examination and a culture was obtained; in the second, the microscopical examination showed no tubercle bacilli and no culture was obtained.

Guinea-pig inoculations were carried out with the thirty-seven cultures by subcuta-

neous injection in the groin. One animal was used for each culture. Four died in ten to fourteen days. These showed beginning disease in the regional glands. Thirty-three died later and at autopsy showed extensive tuberculous lesions.

WM. L.

BACTERIAL VACCINES.

The subject of bacterial vaccines is discussed in an entertaining manner by Dr. E. C. L. Miller, of Detroit, in the June number of the *Therapeutic Gazette*, 1910. His remarks are as follows:

The first attempt to make use of the well known fact that recovery from an infectious disease makes the patient immune to a second attack was when Lady Mary Wortley Montagu introduced into Europe the practice of "inoculation smallpox." In this procedure the person was actually infected with smallpox in order to protect him from smallpox, the inoculation smallpox usually being much milder than smallpox acquired in the regular way. This was soon superseded by Jenner's discovery that inoculation with cowpox would also protect the person from smallpox and was less dangerous than the other. The principle in both cases is the same, cowpox being but a modified form of smallpox, the modification being sufficient to remove the danger but not sufficient to destroy the protection.

No further advances were made until the science of bacteriology came into being. Pasteur with pure cultures of pathogenic bacteria in his hands and Jenner's discovery in mind attempted to modify or attenuate these disease-producing germs, with the result that anthrax vaccine made according to Pasteur's method is used all over the world today. Thus far the work had all been along the line of prophylaxis—the transition to the therapeutic use of such products came in Pasteur's anti-rabic treatment, in which, from the peculiar nature of the disease, it is possible to institute prophylactic measures during the long period of incubation.

From the use of attenuated cultures to the use of killed cultures is but a step, and we thus arrive at modern bacterial vaccine therapy. As was the case with attenuated cultures, so with killed cultures they were first used for prophylactic purposes and later for curative purposes. The two most familiar instances of prophylactic use are the plague prophylactic employed so extensively in India, and the typhoid prophylactic used first on a large scale in the Boer war in South Africa.

The methods of preparing these prophylactic products vary somewhat; some growing the germs on agar and then suspending them in physiological salt solution, others using bouillon cultures; some counting the number of germs per cubic centimeter, some weighing the moist mass of germs; some depending on the opalescence of the mixture or the number of cultures employed. Whatever the manner of preparation, these prophylactic vaccines consist of the germs in question in suspension in water. They are standardized in some way to a more or less definite strength and killed by moderate heat. They are injected subcutaneously in doses sufficient to produce very decided general symptoms, and two or three injections at intervals of ten days seem to give decidedly better protection than a single injection.

It is difficult to give exact figures on the results achieved because the work is with human beings, who cannot be rigidly controlled, but the general impression seems to be that those inoculated are less liable to contract the disease than those not inoculated, and the inoculated who do contract the disease are less liable to die than those not inoculated. In short, prophylactic inoculations reduce both the morbidity and the mortality of the disease. This is shown most clearly in the European soldiers who go to the tropics, and less clearly in attempts to immunize the natives themselves. For example, in the British army from March 1, 1906, to February 28, 1907, among 4,884 men inoculated against typhoid

and 157,033 not inoculated, the statistics compiled show the following results:

Inoculated, per cent of cases, 2.66; per cent of death, 0.20.

Not inoculated, per cent of cases, 6.48; per cent of death, 0.81.

The therapeutic use of killed bacteria is intimately associated with the name of Sir A. E. Wright, of London. It was he who worked out the dosage and rational indications for treatment and thus made their general use possible. Most bacterial vaccines used in this country are made according to Wright's method, which in brief is as follows:

A culture of the germ on inclined agar usually twenty-four hours old is washed off with physiological salt solution and very thoroughly shaken to separate the germs one from another. A small sample is then reserved for assay, and the remainder heated at 55 degrees to 60 degrees C. for one-quarter to one hour, depending on the germ. After being killed it is diluted to the desired strength with physiological salt solution containing some antiseptic preservative such as 0.2 per cent of trikresol or lysol or 0.5 per cent of carbolic acid, and tested by injection into animals and by incorporation into nutrient culture media. The usual method of determining the strength of a vaccine is by counting the number of germs per cubic centimeter. This can be done very simply by mixing equal volumes of fresh normal blood and the vaccine, spreading this mixture out as a thin film on a slide and staining. When examined under the microscope, one sees both red blood cells and bacteria scattered over the field, and by counting one can determine the ratio the bacteria bear to the red cells. Knowing as we do that normal blood contains about five thousand million red cells per cubic centimeter, we can at once determine the absolute number of bacteria per cubic centimeter by a proportion as follows:

The number of red cells counted is to the number of bacteria counted as five thousand

million is to the number of germs per cubic centimeter in the vaccine.

The best known and most widely used of the bacterial vaccines is that made from the staphylococci, and in pure staphylococcic infections the results have been remarkably good. Numerous observers report uniformly good results in treating boils and carbuncles, many using stock vaccines. The cases of pure staphylococcic septicemia, although few in number, have mostly done well under vaccine treatment. However, in these cases personal vaccines and the control of treatment with the opsonic index are highly desirable. Staphylococcus vaccines are also very useful in the numerous cases in which the staphylococci are found as a secondary infection. Probably the best known example is its use in acne. The exact etiology of acne is still somewhat obscure, but the disfiguring pustular condition can be cleared up by the use of stock vaccines of staphylococci and often a complete cure effected. The cure of osteomyelitis, psoas abscess, various fistulae, and chronic discharges is often greatly hastened by the administration of staphylococcus vaccines, thus reducing the effect of the secondary infection.

In diseases of known streptococcic origin the results have been very encouraging. A number of cases of septic endocarditis have been cured, and several men report erysipelas cases successfully treated. In these cases stock vaccines may be used at first, but if at all possible, personal vaccines should be prepared and their administration should be controlled by readings of the opsonic index. Streptococci are undoubtedly connected in some way with scarlet fever, but the results so far in the treatment of scarlet fever with streptococcus vaccines have not been encouraging. The relation of streptococci to rheumatism and chorea is still problematical. Patients with pulmonary tuberculosis complicated by a secondary infection with streptococci are frequently greatly benefited by the administration of streptococcus vaccines.

Gonococcus vaccine is usually not given

during the acute urethritis, though some have reported good results from the use of small doses frequently repeated. It is more often given to help clear up an old discharge that persists in spite of all other treatment. It is also indicated in all cases after the acute stage has passed to hasten complete recovery. Owing to the difficulties encountered in attempting to grow the gonococcus, stock vaccines are usually employed. There is more variation in the dose employed than with most other germs, running all the way from five million to one thousand million germs.

Pneumococcus vaccine has been used with some success in cases of local pneumococcic infection, as in the antrum, middle ear, etc., but its use in acute lobar pneumonia has been sadly disappointing, unless the recent work by Leary, of Boston, proves successful.

Typhoid vaccines, although fairly successful in the prevention of typhoid fever, have not been of value in treating the disease nor in removing the bacillosis of so-called typhoid carriers.

The bacillus coli communis may be a factor of sufficient importance to justify treatment with a colon vaccine. This is especially true in colon infections of the genito-urinary tract and of the biliary tract, and many cases have been reported showing good results.

Many people are very susceptible to "colds," and attempts have been made to increase the resistance of such people by the use of vaccines made from the organisms found on the mucous membrane of the respiratory tract during this condition. Among those so used are: Micrococcus catarrhalis, bacillus influenzae, bacillus septus, bacillus of Friedlander, streptococci, and pneumococci. These are sometimes used separately and sometimes combined. Good results have been reported, but it is too early to say what permanent value such vaccines will have.

In thus going over the field of bacterial vaccines several considerations press themselves upon our attention:

1. Specific therapy presupposes specific

diagnosis. The physician must know what germ is producing the trouble before he can know what vaccine to administer. A patient with a streptococcic pyemia will not be greatly benefited by the administration of a pneumococcus vaccine, nor will an infection with the bacillus coli be cleared up by administering a staphylococcus vaccine. It means that the physician must become something of a bacteriologist before he can successfully administer these vaccines. He must at least be able to recognize the different germs, and if he expects to make up personal vaccines he should be much more.

2. In regard to stock vaccines versus personal vaccines the following general statement is about correct: Stock vaccines must be used in the case of tuberculosis and gonorrhoea because of the technical difficulties encountered in trying to grow the germs for personal vaccines. Stock vaccines of the staphylococci will in most cases give about as good results as personal vaccines and are largely used, while for all other germs personal vaccines are superior to stock vaccines. With this latter class of cases many physicians begin treatment with a stock vaccine, and later, if the case does not progress satisfactorily, they change to a personal vaccine, which by that time can have been gotten ready.

Our artificial classification of the organic world into genera and species is not supported by hard and fast lines in nature, living forms tending to occur in groups. Immunity is not confined to the species or genus, but extends to the group. For example: the blood serum of a rabbit immunized to horse blood will hemolyze not only horse blood, but also to a less degree the blood of the ass and zebra. An antiserum to sheep blood will also react somewhat with the blood of the ox and antelope, while the blood serum of a rabbit injected with human blood will to some extent hemolyze the blood of the higher apes. In the same way the injection of one particular strain of streptococci will immunize the patient not

only to that one strain, but more or less to the whole group of streptococci. It is this overlapping of the immunity onto closely related strains that explains the value of stock vaccines. If, as frequently happens in polyvalent vaccines, the stock contains a strain identical with the germ causing the trouble, it will give entirely satisfactory results. If none of the germs in the vaccine exactly correspond to the strain in the patient, the stock vaccine, though valuable, will not be as good as a personal vaccine.

3. In the regulation of the dosage the aim is to produce the greatest amount of positive phase consistent with the least amount of negative phase, or, from the clinical standpoint, the practice is to give as large a dose as you can and not produce a reaction. A very slight reaction does no harm, but a strong reaction is to be avoided. In any particular case the best practice is to give a dose that is certainly safe and then increase it up to the production of a slight reaction. There is considerable variation in the size of dose employed by different workers with all germs, but with gonococcus vaccines the variation is enormous, running from five millions up to hundreds or even thousands of millions. This variation is probably due partly to the different strains of germs used in making the vaccines, and especially to the different methods of manufacture.

The intervals between doses are usually rather arbitrarily chosen, running from two or three days up to seven to ten days. As a rule in acute conditions the intervals should be shorter and the size of dose smaller than in chronic states. Often the patient by his own feelings can tell when the positive phase, corresponding to the period of improvement, is passing off; the next injection should be given before this stage has entirely disappeared.

4. Attempts to administer vaccines by the mouth or by the rectum have not met with success. The subcutaneous tissue seems to be eminently fitted for the absorption of vac-

cines and the resulting stimulation of immunity production.

Vaccine therapy is by no means a panacea. Many attempts have been made to extend serum therapy to all sorts of diseases, but valuable results have been obtained only in the few diseases in which the toxin produced dominates the situation. When this toxin is injected into horses, they become immune to it by virtue of an antidote found in their blood. This antidote or antitoxin can be used to neutralize the toxin in a patient. When, however, the important factor is not the neutralizing of a toxin, but the destruction of invading bacteria, the problem is not so simple. Horses can be immunized to these germs, but the transferring of their immunity to the patient is the difficult part. Under these circumstances the natural recourse is to immunize the patient direct, and this is done by the administration of bacterial vaccines. Serum therapy has been narrowed down to a very few diseases; vaccine therapy will in time probably be applied only in certain conditions, but just what these conditions will be it is too early yet to say.

W. M. L.

ANTITYPHOID INOCULATIONS.

G. H. R. Gosman, Washington, D. C. (*Journal A. M. A.*, October 1), gives the history of typhoid inoculation in the British and German armies in Africa and India and the results obtained by Major Russell in the United States Army, which prove its success as a preventive of typhoid. The work of W. J. Stone in Toledo, Ohio, is also quoted. He has recently reported the successful treatment of a typhoid carrier by vaccine, the bacilli disappearing completely from the urine after six inoculations, and he thinks that this method offers more chance of cure of carriers than any other one known. During the past year there has also been a series of antityphoid inoculations in the Massachusetts General Hospital under the direction of Spooner, with

such success that this is the first year no typhoid fever has originated there. The idea was to reender immune nurses and attendants, and they not only made no objections, but voluntarily offered themselves. Gosman describes the methods of preparing the vaccine from typical typhoid cultures, washed off into a normal saline solution, tested for purity, placed in sealed tubes, and the bacteria killed by heat at 60 C. for one hour; 0.25 per cent of trikresol is added as a safeguard, and the vaccine used in the army is tried on at least two animals before its use on human beings. The site of the inoculation is the insertion of the deltoid on the arm, the dose given subcutaneously. Thorough antisepsis is used throughout. There is usually some headache and malaise after the injections and slight local irritation, sometimes a little tenderness in the axillary glands. The entire reaction is over in forty-eight hours and while it lasts it is best not to permit any active exercise. Some susceptible individuals may have a more severe reaction, but it also disappears in the time mentioned. According to the method most used now, three doses are given ten days apart; the first of 500,000,000 and the second and third of 1,000,000,000 each. He has not observed any anaphylactic symptoms in any of these cases. The protection is given at once and British statistics show that it lasts three years. Though the method has been known since 1898 it has not become so popular as it should be, probably because of a mistaken notion that the reaction is severe. Gosman, however, is convinced of the harmlessness and the protective effects of the procedure. While typhoid fever, he thinks, will always be with us, there is no necessity of its being such a scourge as it has been, especially during military operations.

EHRlich's "606" IN SYPHILIS.

H. J. Nichols and J. A. Fordyce, New York (*Journal A. M. A.*, October 1), report experience with Ehrlich's "606" in the treatment of syphilis. They first give an account of the re-

searches which led Ehrlich to the discovery of the remedy. The animal parasites causing malaria, syphilis, etc., apparently cannot be successfully attacked by immune sera. Hence the search for substances which would attack the parasites without injuring their host. In this line of investigation about 630 substitution products have been made and tested, of which only four gave promise of value, possessing the required parasitotropic properties without at the same time being injurious to the organs of the host. These substances are: acetyl-atoxyl; arsenophenylglycin, or "418," tryparosan, and arsenobenzol, or "606." Excepting the drug tryparosan, arsenic is the acute principle in all the preparations, the other chemical groups present merely serving to fix this substance to the parasite. Thus for example, it has been found that the acetyl group has a special affinity for trypanosomes, and the amino and hydroxyl groups in especial affinity for the spirochetes. Of course this could only be determined by animal experiments, and after the discovery that syphilis could be transferred to the lower animals, the end became the discovery of a drug which in a single dose would destroy all the parasites without injuring the host, and this has apparently been accomplished with "606." Patients who have resisted the action of mercury, or who could not from idiosyncrasy use it, have improved at once under the use of "606" to which no special idiosyncrasy has as yet been observed. The drug is described as a yellowish powder rapidly oxidizing in the air and hence put up in vacuum tubes. It dissolves in water with difficulty, making a strongly acid solution which is very painful on injection. Hence the substance is administered either as a neutral or as an alkaline salt. The administration is by injection deep into the muscle or veins, or beneath the skin. At present it is recommended that the administration be subcutaneous. "According to this method, the drug, in a dose which has varied up to the present from 0.3 to 0.6 grams, is dissolved in a mortar in from 1 to 2 c.c. of or-

dinary solution of sodium hydrate. Acetic acid is then added, drop by drop, until the base precipitates out in the form of a fine yellowish suspension. This precipitate is collected in from 1 to 2 c.c. of sterile distilled water, and there is added either 1-10 normal sodium hydrate, or 1 per cent acetic acid, as needed, until the reaction becomes precisely neutral to litmus. According as the reaction is or is not accurately neutral, the injection will be followed by much, little or no pain. It is moreover desirable to subdivide the precipitate as finely as possible, which can be done by rubbing. The suspension is then drawn into a suitable syringe and injected subcutaneously below the shoulder blades after previous cleansing and disinfection of the part. It often happens that there is slight pain lasting a few minutes following the injection, and in some instances a slight swelling arises on the second or third day following the injection, but no bad effects are produced. There may be slight rise of temperature and in some instances an urticarial eruption has occurred, but no specific toxic effects on the eyes, kidneys, or nervous system have been observed." The authors report their personal observations in detail. Fourteen patients received the injections and the results are also given in tabulated form. In two cases the doses were too small, but the other twelve have apparently got rid of the parasites and there has been no relapse in four months, all the Wasserman reactions remaining negative. None of the patients received more than 0.3 grams and the first two much less. This is about half the dose now being used abroad, 0.6 grams being found non-toxic to man. The final word in regard to the drug will not be said probably for some years, but the authors say the fact remains that we have no drug the extraordinary effects of which in syphilis equals that of "606." The article is illustrated.

BACTERIOLOGY OF ACUTE RESPIRATORY INFECTIONS IN CHILDREN.

L. Emmett Holt, New York (*Journal A. M.*

A., October 8), publishes his more recent studies on the bacteriology of the acute infections of the respiratory tract in children. In a previous paper he had pointed out that the *Bacillus influenzae* played an important part in respiratory infections, especially in winter and early spring, but disappeared during the warmer months. He has somewhat enlarged his research, and included observations on the occurrence in the respiratory tract secretions of the pneumococcus, influenza bacillus, the staphylococcus and streptococcus. The diphtheria bacillus and *Micrococcus catarrhalis* are not included, though they were noted when present, and a detailed report prepared in regard to the latter. Between September, 1909, and June 1, 1910, he made over 1,100 cultures from 500 patients and thirty nurses and attendants; also cultures from lung and heart blood in eighty-five routine autopsies. The patients were from the Babies Hospital, and mostly under 3 years of age, and the results are given in tabulated form. Four groups of patients are included: (1) those with pneumonia, mostly of the acute primary type, bronchopneumonia predominating; (2) those with bronchitis and other respiratory infections, for the most part mild; (3) those with pulmonary tuberculosis; (4) those with non-respiratory diseases, and included in this group are thirty nurses and attendants. Pure cultures were never seen, though a dominant one was present in many cases. In all the groups in fact, the predominance of the pneumococcus and of the *Staphylococcus aureus* is notable, while the *Bacillus influenzae* percentage is considerably less than that of the preceding season. The streptococcus was rarely predominant, though occurring usually in small numbers in over half of the patients and in one-third of the cultures taken. That the character of the infection in bronchitis is essentially the same as that in pneumonia is not generally appreciated. In the second group, of mild cases, the relative frequency of the different germs in cultures was about the same as in the first group, except a little larger percentage of in-

fluenza cases. In the tuberculous cases the percentage of influenza is still higher, while the pneumococcus and staphylococcus predominate. In the non-respiratory cases the staphylococcus was found in about 85 per cent and the streptococcus in about half that number. It is worth noting that 52 per cent of the patients showed that pneumococcus and the proportions of influenza fell the lowest of any of the groups. He has appended the results of cultures from fifty-seven cases of acute otitis. About half of these patients showed the influenza bacillus in throat cultures, but only four of them showed it in ear cultures. With the mixed character of the infection in all these cases, it was often impossible to connect the clinical symptoms with definite findings. There were very few cases of typical acute pneumonia, and there was no definite modification of the symptoms observed with the presence of the streptococcus, except in a few cases of exceptional severity. The influenza bacillus seemed to complicate and cause irregularities when it occurred, and several fairly distinct clinical types were associated with it, which are described. It was more frequently associated with symptoms of the lower than of the upper respiratory tract and, in general, mild general symptoms, irregular physical signs and marked temperature variations. A number of cases are reported. Holt thinks that the influenza bacillus plays a considerable role in the respiratory diseases of young children. He is more doubtful of the influence of the streptococcus and the staphylococcus, but reports a case which made quite an impression on him, of bronchopneumonia with otitis apparently cured by staphylococcus vaccine. The necropsy findings correspond with the clinical findings by sputum cultures in the main. The mixed infections were found in a great majority of cases. In conclusion, he rather emphasizes the significance of repeated findings of the bacillus influenza in sputum cultures, in the winter and spring season at least.

THE NEGRO AS A HEALTH PROBLEM.

H. M. Folkes, Biloxi, Miss. (*Journal A. M. A.*, October 8), asserts that the colored race, before the abolition of slavery, showed a higher standard of health among the children than has ever been maintained since their emancipation. At present, the conditions are much less favorable, and the exemption from infectious diseases observed in the children of intelligent white people is seldom seen in the negro. Those diseases to which the negroes are more immune than whites occur in greater frequency among the mixed bloods, in proportions according to the dilution. Negroes of all shades are especially susceptible to tuberculosis and measles, but, in an experience of nearly twenty years, he cannot recall a case of scarlet fever, diphtheria, mumps or tonsillitis among black negroes. He recognizes a great improvement both among white and negroes during the last ten years, but one of the gravest problems confronting the whites of the South is to prevent tuberculosis and venereal disease among the colored population. The negroes are as a class immoral, and in these particulars, as well as some other diseases, like hookworm and amebiasis, the problem is not alone political, but one striking at the vitality of the race. He claims that miscegnation is more in evidence in the North at this time than in the South.

J. Holinger, Chicago (*Journal A. M. A.*, October 8), gives a general survey of the pathology and prognosis of middle-ear inflammations, indicating some open questions that still exist with our present knowledge of the subject. Bacteriology is of little use, as the differentiation is always made on pathologic grounds, and statistics are not altogether available. At present it is too early to utilize them. The forms under which he discusses the subject are: (1) serous labyrinthitis which may heal by simple absorption of the fluid or may become organized and produce scars which can crush out the life of some of the important cell groups. (2) labyrinthitis in

connection with acute otitis media in which the infection reaches the labyrinth either through the round or oval window, or more rarely through some defect or dehiscence of the bony wall. The infection at once invades the whole labyrinth and has two routes to the meninges—one along the auditory nerve, the other through the aqueductus vestibuli and the endolymphatic duct. The round window is not so often the route of infection as the oval. The forms of otitis media after scarlet fever, diphtheria and measles leading to labyrinthitis and finally to formation of sequestrum, probably belong to this category. The third division, cholesteatoma, occurs after the destruction of a large part of the lining of the middle ear, where the scar or tympanic membrane has become adherent to the inner wall of the ear or aditus ad antrum, with the result of displacing the normal lining of the middle ear by a cholesteatoma membrane, under which the bone becomes gradually absorbed and fistulas into the labyrinth are produced. Suppuration into other parts of the middle ear may coexist or may not, and the result of the cholesteatoma may be a circumscribed labyrinthitis, usually confined to one or two canals, or a general labyrinthitis leading to destruction of all important parts of the organ, with the result of total deafness. It may be acute or chronic, and, when acute, is frequently treated by surgery or syringing, with the result of forcing the cholesteatoma masses through a fistula, causing complete destruction of the labyrinth and sometimes leading to meningitis. This is by far the most frequent form of labyrinthitis associated with middle-ear suppuration. Besides the simple absorption of the capsule, the process may invade the labyrinth by caries and, in long-standing cases, both processes take place together, and it is hard to say which is most important. Lastly, he mentions tuberculous meningitis, the chief characteristic of which is absence of all attempts at regeneration on account of the poor general condition of the patient. In these cases the deafness is usually pronounced, but the other labyrinthine

symptoms are rarely mentioned by the patients. Death from meningitis rarely occurs in tuberculous labyrinthitis. As regards prognosis in serous labyrinthitis, neither life nor hearing will be often jeopardized. The most dangerous of all forms is the labyrinthitis in connection with acute otitis media. The so-called acute panotitis usually terminates fatally, as the meninges are invaded almost at once. Operation can hardly be too early, provided the diagnosis is certain. Scarlet fever and diphtheretic otitis complicated with labyrinthitis progress more slowly, owing to the poor general health of the patient, and therefore the life be spared, though the hearing of the involved ear be destroyed. The prognosis of labyrinthitis from cholesteatoma is modified by the natural tendency to heal of suppurative labyrinthine inflammation, provided life is not destroyed by complications. The result as to hearing depends mainly on the extent of the damage. The most serious forms of labyrinthitis show attempts at recovery. In conclusion, Holinger speaks of the large death rate in connection with operations on the labyrinth, and the necessity of qualified operators in their performance. Many a mastoid operation also leads to disaster through lack of care or competency of the operator to avert labyrinthine involvement.

TEST FOR GASTRIC CANCER.

J. W. Weinstein, New York (*Journal A. M. A.*, September 24), describes a modification of the glycytryptophan test of Neubauer and Fischer which is also described. In it the filtered stomach contents are added to a solution of glycytryptophan which is placed in a thermostat for about twenty-four hours. At the end of that time a test is made for the presence of tryptophans by the bromin method. A reddish-violet color, or at times a rose-red color, appearing, shows the presence of tryptophan and the test is positive for gastric cancer. Weinstein points out the special sources of error in the method, such as the presence al-

ready of tryptophan in the stomach contents, the presence of peptid-splitting bacteria, or trypsin or blood, some of which he thinks are exaggerated by Neubauer and Fischer. He has been experimenting on the value of this test, and thinks that glycytryptophan is unessential in the test and that there are some advantages in doing without it. He also does not believe in the presence of blood being a source of error and the testing for occult blood is superfluous. The test as he recommends, as modified by himself, is made as follows: Four or five hours after a regular dinner some stomach contents are secured, filtered and tested with bromin water for tryptophan. If present, reaction is positive; if absent, some of the filtrate is transferred to a stoppered bottle and treated with a little toluol, or better still, without a preservative, is put into the thermostat and tested again for tryptophan twenty-four or forty-eight hours later. Although the reaction sometimes develops at room temperature, the mixture should be kept in a thermostat for the period stated. The most serious defect of the tryptophan test is its inconstancy; it may be present in one specimen and not in another, so three or four specimens of stomach contents obtained at different times should be tested. Another shortcoming is that the contents must be practically colorless, so care must be taken to exclude specimens that would be colored by the food and regulate the diet accordingly. The fact that free hydrochloric acid interferes with the activity of the cancer enzyme or may destroy it is another serious objection. In spite of all these, he considers it a valuable sign in the diagnosis of gastric cancer and superior to the other tests in that it is a sign of itself and does not require the association of other symptoms which are met with in conditions other than carcinoma. Moreover none of these has any negative value. Whether it is an early sign or not he is not able to say. A series of cases in which the test was used, with positive and negative results, is also published at the end of the paper.

POLIOMYELITIS.

S. Flexner, of New York (*Journal A. M. A.*, September 24), gives a resume of the experimental contributions to our knowledge of human poliomyelitis. These he shows have yielded a number of important facts relating to the spontaneous disease in man. These facts include the discovery of the nature of the virus, of many of its properties, of certain important clinical and pathological peculiarities of this disease, of the phenomena of immunity, of a mode of spontaneous infection through the nasopharyngeal mucosa, and have also served as a basis on which to develop measures of prevention and on which it is hoped to work out a successful treatment. The advances which have been made will make it possible to accurately determine whether the disease is a single clinical and pathologic entity or whether it is a generic name covering groups of symptoms and due to the effects of certain lesions of the brain and cord, of which it is not merely one, but the most important, variety. It is improbable, he says, that poliomyelitis, like meningitis, may be found to rise from several independent causes and that epidemic poliomyelitis, like epidemic meningitis, may be distinguished among the varieties by being always the result of a particular micro-organism. We have already evidence that certain animals like the dog, poultry, and possibly the horse, are subject to poliomyelitis due to a special germ in each case.

TUBERCULOSIS IN MILK.

F. O. Tonney, Chicago (*Journal A. M. A.*, October 8), gives an account of the work done by the Chicago Department of Health in the examination of market milk for tuberculosis germs. The samples were collected by the health department inspectors, partly in the original containers and partly in sterilized bottles furnished by the department, and the effort was made to have the samples reach the laboratories within a few hours from collection. Guinea pigs were used for the tests. After inoculation they were kept in clean

cages and were observed for three months. It is to be mentioned, however, that inasmuch as the negative animals were not post-mortemed, but allowed to live and be used for other purposes, the results of the series must be reported as minimum findings only. No cultural studies were attempted to determine the presence of human and bovine types of the organism. From a strictly scientific point of view it is to be regretted that cultures were not made from the organs to exclude the possible presence of Rabinovich's butter bacillus. The autopsies were made when the laboratories were overworked, but they were in every case well marked and typical, and it is believed that the positive findings reported may be considered tuberculosis. The total number of milk samples examined was 163; of these, 51 caused the death of the animals injected from acute infection within three weeks before diagnosis of tuberculosis could be made; 112 remained available, of which 10, or 8.9 per cent, proved tuberculous. Comparing this with observations made in other cities and combining their figures with these, he finds the incidence of tubercle bacilli in the milk supplies to be about 8.3 per cent. In Chicago, the situation is being met by a regulation providing that all milk sold beginning January 1, 1914, shall be obtained from tuberculin-tested cows. In the interim milk not thus obtained may be sold, provided it is pasteurized according to the rules and regulations of the department of health. Under this ordinance about 54 per cent of the milk sold in Chicago at the time of writing is pasteurized; 24 per cent is tuberculin tested. It is calculated that before the close of the season the remaining 22 per cent will be pasteurized. During the summer of 1909, when only 30 per cent was pasteurized, a decrease of 521 was noted in the death rate of children under 1 year, chiefly among children suffering from diarrheal diseases. The milk-produced diseases of children are, he thinks, first in order, the diarrheal diseases responsible for about one-third of the deaths among children under 2 years in our large cities; second, is typhoid

fever; third, is tuberculosis; fourth, is scarlet fever; fifth, is diphtheria; and sixth, a group of miscellaneous disorders not particularly important in this country, such as cholera and foot-and-mouth disease. He thinks that these may be largely eradicated by strict observation of sanitary rules in the production and handling of milk.

YONKERMAN'S "TUBERCULOZYNE."

The *Journal A. M. A.*, October 8, makes a striking comparison between the Food and Drugs Act of the United States and that of Great Britain, using as an illustration the preparation named above, which originates in Kalamazoo, Mich., and is now being extensively advertised in the British Isles. Formerly, we had in this country no protection against British quacks and quack medicines, and were more or less overrun with them. Now, however, the reverse is the case and the reason lies in the fact that the activity of the federal, and to a certain extent of the state authorities has resulted in a steadily narrowing field of operation for the quack and nostrum vender in the United States. Great Britain, on the other hand, has a Food and Drugs Act that is much less broad and specific than our own, and the British courts, too, have shown a decided tendency to treat the "patent-medicine" "faker" with a leniency incompatible with good sense or public policy. As an interesting example of the greater laxity in Great Britain, this Yonkerman's "Tuberculozyne," consisting of a weak solution of potassium bromid in water with a little alcohol and glycerin and minute quantities of aromatics, is advertised abroad as "the only known remedy of all forms of consumption," "an antitoxin acting agent of the greatest therapeutic value," while in this country, after the name appears only "the new remedy for consumption, not a patent medicine."

In the booklet, also, similar differences are observed in those used in the two countries. It is called in the one circulated abroad "the most marvelous medical discovery of the age, cures consumption" and "the copper cure for con-

sumption." Many other interesting differences could be named. The estimated cost of the ingredients of the two solutions is given by the analyst of the British Medical Association as 5 cents, but it is sold abroad for \$12 and in this country for \$10. In spite of the claim that it "is sold at a very moderate advance above actual cost," those who invest in it are paying \$10 or \$12 for 5 cents' worth of material. That is Yonkerman's idea of a moderate profit.

FRACTURE AND DISLOCATION OF SHOULDER.

Two cases of this rare injury are reported by John S. McEwan, Orlando, Fla. (*Journal A. M. A.*, September 24.) The injury is usually caused by the patient having received a heavy blow on the shoulder or having fallen on the shoulder or on the outstretched hand or elbow. In such cases an anesthetic should be administered and every method be tried in order to reduce the head of the humerus before performing operation. When other efforts fail, McBurney's operation is advised, in which an incision is made in the soft parts on the outer aspect of the upper fragment extending down to the bone and a hole is drilled in the latter through which a stout hook is inserted and direct traction made on the upper fragment in the proper direction. One of the author's patients declined operation. In the other, he opened the joint, using the anterior incision, took out the head of the bone, curetted the glenoid cavity and put the arm up in position and kept it immobilized until the wound healed. Since then the patient has had constantly passive and active motion with massage. In conclusion he says: "All patients with unreduced retroglenoid fracture dislocation should be operated on, using posterior inter-muscular incision recommended by Dr. W. G. Spencer."

"FRUITOLA."

A fake gallstone "cure" is the subject of an expose that appears in the Pharmacology Department of *The Journal A. M. A.*, September 24. The "cure," which is known as "Fruitola"

and is put up by the Pinus Medicine Co., of Los Angeles, consists of an 8 ounce bottle of oil and six powders, four of the latter being in blue papers and two in white. The directions on the bottle tell the patient to dissolve the contents of two blue and one white paper in a glass of water and drink it about 3 P. M. At bedtime the entire contents of the bottle are to be taken and early the next morning the contents of the remaining papers are to be dissolved and drunk. To show the patient that he is getting his money's worth the following instructions are given: "When the medicine operates use a vessel partly filled with water, pour in more water or stir the contents, and the gallstones will float on top in the shape of dark green lumps, varying in size from a pin head to a hickory nut, in bad cases even larger." As *The Journal* says these "dark green lumps" are nothing but the soapy concretions that usually are passed when massive doses of oil are taken. The nostrum was analyzed in the Association's laboratory and from the results it was concluded that the oil was nothing more than olive oil flavored with a trace of anise, while the powders were the ordinary seidlitz powders. *The Journal* remarks: "That persons should be mulcted of a dollar for the privilege of having their bowels moved and being made into a peripatetic soap factory may seem humorous—but it is an outrage nevertheless."

VERTIGO.

G. E. Davis, New York (*Journal A. M. A.*, October 8), describes the anatomic structure and nerve supply of the apparatus of equilibrium and its derangements causing vertigo. He gives at some length the views of Scott, of London, with a general history of the development of the knowledge of the functions of the labyrinth. He especially notes Scott's theory of ablation nystagmus, viz., the influence of carotid pulsation, and points out the evidence in its favor. His general conclusions are substantially as follows: The internal ears are the special sense organs of equilibrium. By them we

recognize (orientation) and maintain our relations to space (equilibration). The visual sense organs and the kinesthetic sense organs (the muscles, etc.), are accessory sense organs of equilibrium and are coordinated with the internal ears through the mediation of the cerebellum. The special sense organs, the two internal ears, one on each side, are normally symmetrical in structure and function, and anything, whether physiologic, experimental or pathologic, which innervates, stimulates or irritates one of these twin organs more than the other, or accomplishes the same thing through enervation, depression or destruction of one in excess of the other, in that measure tends to or creates proportionally disturbance of their joint function, equilibration. If this disturbance is sufficiently marked or intense we also get nystagmus and vertigo. Davis admits that the complex labyrinthian function of equilibration and orientation is far from being completely understood, and that disorders of its apparatus manifesting themselves in vertigo, nystagmus and disequilibration are also to a large extent unexplained. He believes, however, that the interest now manifested in research work directed along these paths promises an early satisfactory solution of the problem.

EXTERNAL PREPARATION OF THE U. S. P. AND N. F.

C. S. N. Hallberg, Chicago (*Journal A. M. A.*, September 24), says that previous to the last revision of the Pharmacopeia the preparations of the U. S. P. for external use were designed from a purely pharmacal standpoint, *i. e.*, the selection of the vehicle was governed primarily by pharmaceutical considerations so as to insure stable and otherwise superficially satisfactory preparations. Having immediate charge of these preparations in the last revision, he accepted suggestions from prominent physicians and specialists and the formulas for these preparations have been for the first time revised on a therapeutic basis. Since they have proved uniformly satisfactory pharma-

etically he thinks it well to consider them briefly according to their classification and therapeutic grouping, in order to call out criticisms and discussion. He therefore enumerates the various ointments, cerates, plasters, suppositories, oleates and collodions of the pharmacopeia, pointing out in what he thinks improvement has been made as regards the vehicles used, etc. The National Formulary is not so important a work as the U. S. P., but contains many preparations used by physicians, and its revision is in progress at the present time. Now is the time, therefore, to make additions and corrections, if such are advisable, and he enumerates the preparations included for external use for criticism and suggestion. A notable change is the use of the term paroenium for petrolatum saponatum.

SYSTEMIC AND ORAL CONDITIONS.

V. A. Latham, Chicago (*Journal A. M. A.*, October 1), lays the early decay of the teeth in children to the faulty systems of education and bringing up of the present day. The first seven years of life constitute a period of stress and the teeth show the effects as well as the other organs of the body. She gives a rather lengthy list of diseases in which the condition of the jaws and mouth should be thoroughly studied. The stomatologist often has to treat these patients and has opportunities to see them earlier than the general practitioner. Dr. Latham specially mentions Ludwig's angina as a result of dental suppuration, to which adults are sometimes subject as well as children, and which is likely also to be confused with a more recently discovered disorder, viz., Vincent's angina. Stomatitis following as a complication of a number of more or less grave infectious conditions is also mentioned, especially its connections with uremia. The uremic form of stomatitis is usually a serious condition. When the renal conditions are attended to, however, the buccal conditions readily improve. Dr. Latham speaks also of the importance the polypathogenic part played by the mouth bacteria. The staphylococci and strep-

tococci may start various forms of local or general suppuration from their point of action in the teeth and even general blood poisoning, besides causing the dental anemia of or cachexia of Lejars.

ALVEOLAR ABSCESS.

S. L. McCurdy, Pittsburg (*Journal A. M. A.*, October 8), believes that dentists should realize the seriousness of the most frequent operation they perform, namely, that of devitalizing and extracting pulp, since infection and serious bone destruction arise from this source. The symptoms are well known to all, and, especially if complicated with syphilis, may be very uncomfortable. Destruction of the bony floor of the antrum does not necessarily mean perforation of the membranous floor or infection. An alveolar fistula leading into a cavity containing a considerable portion of the tooth requires extraction of this tooth before recovery can be obtained. Persistent headaches and general reduction of health are frequently caused by very insidious alveolar abscess. He thinks it desirable, in case of necrosis of the mandible calling for removal of bone, to establish drainage through the chin and approximate the gingival margins with sutures so as to shut off the pus cavity from the mouth. Naso-oral fistula, which sometimes occurs, especially in syphilitics, can be cured after due constitutional treatment by a membranous flap from the roof of the mouth. Tincture of iodine is recommended in all suppurative conditions of the mouth as a disinfectant.

MANAGEMENT OF THE BREAST IN THE PUE- RPERIUM AND DURING LACTATION.

By Chas. S. Bacon, M.D. In *Surg. Gynecol. and Obstet.* September, 1910.

The only prophylactic measures usually necessary, says Bacon, is daily washing of the nipples with soap and warm water, followed by rubbing and drying with a clean towel during the last month of pregnancy. The proper time to begin nursing depends on the needs of the child, the activities of the gland, and the

condition of the mother. Premature children must have food at once, while a well-developed one can go two or three days without food, but during this period should be put to the breast three to six times a day; there is no doubt that the colostrum is of value. The usual discomfort from congestion on the second and third days can be reduced by proper bandaging, the object of which is to support and not compress the breast. A strip of muslin, 16 inches wide extending around the chest and pinned in front, and having notches seven or eight inches deep for the shoulders over which the edges of the notches are pinned, serves this purpose best. It should hold the breasts in front of the chest. Application of ice is preferred to massage and the breast pump is advised against.

Rules for prevention of infection and sore nipples: The nipples and areola are washed with soap and water, before and after nursing, once a day. After each nursing wash them with 60 per cent to 80 per cent alcohol. Between nursings apply sterile gauze held in place by the bandage. Washing before nursing is not necessary if these measures are carried out. The nurse should not handle the nipple except under sterile conditions.

A STUDY OF MISTAKEN DIAGNOSIS: JOURNAL OF THE A. M. A., VOL. 55, NO. 16, PAGE 1343, BY RICHARD C. CABOT, M. D., BOSTON, MASS.

The study of these mistaken diagnoses are based on the analysis of 1000 autopsies with a comparison with the clinical findings. The post-mortem findings of each case are brought before the senior students of the Harvard Medical School together with a typewritten summary of the clinical findings, including the history, the physical examinations, the reports on the blood, urine, stomach contents and feces, the X-ray plates and all other data on which diagnosis was based during life.

Under the types of error he has attempted (a) to separate correct diagnoses from mistaken ones, and (b) to subdivide the mistakes

into errors of omission and errors of commission. By an "error of omission" he means failure to find some lesion which has in all probability contributed to kill the patient. By an "error of commission" he means the diagnosis during life of a lesion—such as cancer of the stomach—which autopsy shows is absent. Most of the errors of omission in mitral stenosis were due to the fact that the patients were seen within twenty-four hours of death when practically no evidence remained on which a diagnosis could be based. The presystolic murmur often heard in cases of chronic nephritis, pericardial adhesions, arteriosclerosis and hyperthyroidism or any other cause are hard to differentiate with any degree of certainty from mitral stenosis. The diagnosis of Aortic Stenosis was made in about two-thirds of the cases. Some important facts relative to Aortic Stenosis are as follows: (1) Aortic Stenosis may exist despite the presence of an accentuated aortic second sound, although, as a rule, this sound is diminished or absent, (2) Aortic Stenosis may exist in association with a "water-hammer" or "Corrigan" pulse, though the rule is against this. How these facts are to be accounted for I have no idea. (3) With long-standing cases of "rheumatic" endocarditis involving the aortic valve in patients under 35 years of age, Aortic Stenosis is almost always present (as proved by post-mortem) whether there are any characteristic physical signs pointing to it or not."

The largest percentage of correct diagnoses of heart lesions is aortic regurgitation; it being 84 per cent. This is explained because diastolic murmurs are disregarded unless associated with other vascular phenomena as "water-hammer" pulse, capillary pulse, etc.

Cabot thinks the term Chronic Myocarditis should be stricken from our books because of the fact it is mere guess work. The evidence on which we diagnose myocarditis simply points to myocardial insufficiency.

The diagnosis of arterio-sclerosis was made

in 60 per cent of the cases but it was due to knowledge of the pathology and not physical examination.

As a result of experience with Thoracic Aneurisms he follows the rule: "When, still in doubt between aneurisms and tumor after all proper methods of investigation have been exhausted, call it Aneurisms."

The greatest aids in diagnosis of Cardiac Hypertrophy and Dilatation are blood pressure estimations and fluoroscopy. He shows that in six out of seven Cardiac vascular diseases the percentage of failure is about 33 per cent. He thinks the diagnosis of Mitral Regurgitation should always be specified as being caused by certain troubles or as a complication.

Mistakes in the diagnosis of pneumonia are especially liable in those patients that are comatose or partially so. The congestion may produce all the signs of a lobar pneumonia but there will be no solidification. A pericardial effusion with cough, leucocytosis and fever often lead to a mistaken pneumonia. Only 33 per cent of the cases of Broncho-pneumonia were correctly diagnosed, "When you have the signs of bronchitis but the patient is obviously too sick for (simple) bronchitis, call it broncho-pneumonia." He has frequently used radiography, but without getting any reliable information not obtainable by other methods. The rule in Miliary Tuberculosis is: "When a case is clinically one of tubercular meningitis, call it miliary tuberculosis and you will rarely be contradicted at autopsy."

Owing to the fact that he has seen no cases of scarlet fever, diphtheria and maternity there are few cases of Acute Nephritis. Most of the cases that were once called Acute Nephritis are now recognized to be acute exacerbations of chronic lesions. A much higher percentage of chronic nephritis is diagnosed.

Under the Nervous System he says it is impossible to distinguish hemorrhage, rapid thrombosis and embolism by any study of the

resulting disturbances of function. The attempt at localizing cerebral tumors were failures in most cases.

The highest percentage of diagnoses are found under typhoid fever and diabetes mellitus, both being above 92 per cent. This is explained by the positive tests we have for these troubles.

"Cerebral Syphilis is a diagnosis quite frequently made at the Massachusetts General Hospital, but so far as I know it has never been both made and confirmed during the years covered by this report."

SUMMARY AND CONCLUSIONS.

1. Never make a diagnosis of uremia in a patient seen for the first time in an acute illness characterized by coma or convulsions. Such diagnoses rarely turn out right.

2. Never make a diagnosis of ptomain poisoning without definite chemical evidence. General peritonitis or a tabetic crisis is usually the correct diagnosis.

3. Make no diagnosis of hysteria, neurasthenia or psychoneurosis in a patient whose symptoms begin after the forty-fifth year. The actual diagnosis is likely to be arteriosclerosis, hyperthyroidism, dementia paralytica, or pernicious anemia.

4. Diagnoses of tertian malaria in patients whose symptoms resist quinine more than three days are almost invariably wrong.

5. Bronchial asthma beginning after 40 usually spells heart or kidney disease.

6. Epilepsy beginning after 40 usually means dementia paralytica of cerebral arteriosclerosis.

7. Typical migraine is often a symptom of unrecognized brain tumor or chronic nephritis.

8. Most cases of "bronchitic" mean tuberculosis, broncho-pneumonia or multiple bronchietasis cavities.

9. Aside from the immediate results of acute infections (such as scarlet fever, diphtheria, tonsillitis and pneumonia) "acute" nephritic usually turns out to be chronic.

10. Acute gastritis and gastralgia usually mean appendicitis, gall-stone or peptic ulcer.

11. Pus in or near the liver is often mistaken for serous or purulent pleurisy, for it produces identical signs in the right chest posteriorly.

12. An X-ray of the shinbones may give the first hint of an active syphilitic process in the joints or internal viscera.

13. Systolic or presystolic murmurs, heard best at the apex of a markedly enlarged heart, mean valve lesions.

14. Diastolic murmurs at the base of the heart are very uncertain evidence of aortic disease unless there are characteristic jerks in the peripheral arteries.

15. Myocarditis is a diagnosis which should never be made clinically.

16. Besides the direct evidence afforded by the history and the various methods of physical and chemical examination, diagnosis profits much by taking account of certain familiar pathologic chains or groups of them. Given one or two members of the group it is often wise to act as if the other were present, provided, of course, that the direct evidence in no way contradicts us.

17. Cerebral localization applied to tumors, hemorrhages and the like is still in its infancy.

18. The clinical diagnosis of the so-called diseases of the blood is the easiest and safest in medicine.

TREATMENT OF POLIOMYELITIS FROM A NEUROLOGIST'S POINT OF VIEW.

B. Sachs, New York (*Journal A. M. A.*, October 22), states that our views of the treatment of this condition have undergone a radical change. It will not do for the physician to sit idly and state that "there is little to be done." The disease calls for patient and intelligent treatment with prospect of reward. The entire aim of treatment, Sachs says, is mildly to stimulate the nerves and to exercise in one way or another

muscles which cannot be exercised by will. This, he says, can be done by electricity, massage and by active and passive exercises. He takes up in succession the proper form of electric treatment, the methods of giving massage, and emphasizes the importance of active and passive exercises especially in the earlier paralytic stage. He touches briefly on orthopedic treatment and states that as a rule much time is wasted in hoping for a return of normal conditions. If six months or a year after the onset of poliomyelitis a group of muscles shows considerable wasting, an absolute reaction of degeneration and no return of muscular power, it is useless to hope for spontaneous improvement. The orthopedist should then step in and attempt to correct the mischief done by the disease. He states that he knows of no drug which has the slightest effort on the spinal lesion or on the paralyzed muscles after the acute stage has been passed. While salicylates and mild narcotics will have to be employed in the earlier period of the disease, and even iodids and ergot may be administered in the earlier stages, there is no sufficient reason to exhibit these drugs in the paralytic and post-paralytic periods. For the relief of neuritic and muscular pains, give a combination of pyramidon, citrate of caffeine and aspirin, or aspirin alone, varying the quantities according to the age of the patient. If necessary, codein may be added. Injections of strychnin or of arsenic are absolutely useless, he believes, though there can be no objection to the use of the ordinary blood and nerve tonics, provided the practitioner keep in mind that he is attempting to improve the general condition of the patient and is not endeavoring directly to effect a change either in the spinal cord lesion or in the paralyzed nerves and muscles. In conclusion, he insists that intelligent gymnastic exercise of the paralyzed or weakened limbs is the method to which one should pin one's faith, and from personal experience he states that the physician who

directs these exercises intelligently, and who will direct them patiently, will have no reason to regret the time devoted to this cause. In recent epidemics the disease has been of such varying intensity that we have no right to claim that any case is a hopeless one, and much can be done by properly directed therapeutic efforts.

ORTHOPEDIC TREATMENT OF ACUTE POLIO-MYELITIS.

John Ridlon, Chicago (*Journal A. M. A.*, October 22), states that the treatment of this disease consists of massage, use of braces and surgery. In nearly all cases of anterior poliomyelitis contraction deformities develop sooner or later. In most cases, fortunately, it is later, some months after the acute attack with its usual accompaniment of sensitiveness and soreness of the limb has passed, and when it is comparatively easy with splints or braces to prevent it. But in a few cases contraction deformities, even of severe degree, develop during the first eight or ten days, while the sensitiveness is still so great that it seems a positive cruelty to move the child at all. But if the attending physician allows contraction deformities to develop, whether it be early or late, he should realize fully the responsibility he is taking, and should stand ready to admit that to his neglect of a simple precaution the child must have all the rest of his life more useless limbs than he needed to have. For no orthopedic or surgical treatment can ever make these contracted muscles as good as they might have been had he prevented the development of deformity. In regard to braces, Ridlon says that here and there an orthopedist can be found sufficiently competent to correct some slight contraction deformities by braces constructed to stretch the shortened muscles, but of these there are few, for most young orthopedists seem to have a greater ambition to perfect themselves in surgery than in mechanics. As a rule, braces should be used

only to prevent the development of deformities at joints where the tendency is not great, in joints where the deformity has been fully corrected, and to enable the patient to use the limb more and better than he can use it without the brace. If there is no deformity and no tendency to deformity and the patient can use the limb without a brace, then a brace should never be used. A brace should be a help, not a burden. It is greatly to be regretted that the cupidity of some physicians leads them to order braces from surgical instrument makers who give a commission of 25 per cent on the cost of the brace, for this usually means a costly brace that the physician can neither measure for, fit to the patient, nor use intelligently. Ridlon discusses the indications for surgery and states that there is a certain risk, not often appreciated, in the use of great force in the correction of paralytic deformities. For both from non-use and from deficient nutrition arising from the paralysis, the bones grow thin and friable and may be broken before the deformity can be overcome. These bones when broken sometimes are the source of fat emboli, not infrequently the cause of death. But when a deformity can be safely corrected without a cutting operation it should be so corrected. Then it should be put up in a well-padded and heavy plaster splint and kept in the splint and used for from four to eight months. After that an efficient brace should be worn for years. When a paralytic deformity cannot be corrected by force alone, it can generally be fully corrected by simple tenotomies and force. When this is done the after-treatment should be as before indicated, namely, a well-padded and heavy plaster splint, worn for months while the limb is being used, followed by a brace, for years in most cases, and massage and movements. He declares that tendon splicing is useless and that tendon transplantation is of value in a small and carefully selected group of cases. The tendon-lengthening and joint-fixation

with permanently buried silk ligatures as practiced during the past five years holds out as yet a promise of better results when well done in carefully selected cases. Yet hardly a week passes that we do not see cases operated on by others that have been utter failures. As yet it is too soon to say what the ultimate results will be after ten or fifteen years have passed in the cases that now seem to be entirely satisfactory. Treatment of these cases by nerve grafting is useless. The resection of flail joints in complete paralysis in order to obtain ankylosis and escape the burden and cost of braces for life is sometimes a success, and sometimes a failure of bone union, probably owing to the impaired nutrition. The prognosis, in Ridlon's opinion, is not good for recovery from the paralysis.

THE TEACHING OF SURGERY.

Certain faults in the present method of teaching are pointed out by M. D. Tinker, Ithaca, N. Y. (*Journal A. M. A.*, October 22), who also makes certain recommendations for its betterment. One great fault is the ignoring of the relative value of what is taught. In practically all medical colleges surgery is taught as if all the graduates were to become surgeons. Relatively few graduates will actually practice major surgery, but the things they will have to handle are comparatively neglected. These are the common surgical diseases and injuries, the giving of anesthetics, the use of antisepsis, arrest of hemorrhage, more thorough training in surgical diagnosis, symptomatology and prognosis, as well as the treatment of the common forms of surgical disease and injury. As a result many of our present-day graduates are better posted on the latest brain surgery or blood-vessel anastomosis than on the diagnosis of appendicitis or gall-stones, or the treatment of leg ulcer. Tinker criticises also the method of written examinations as a test of the fitness of a student; these should be replaced largely by clinical, and laboratory examinations. The

need of laboratory methods in teaching anti-sepsis is also emphasized and the method used in Cornell University is described. Practical experience in anesthesia should also be requisite. Tinker also makes a point of the parallel use of current literature in his studies by the student, instead of depending exclusively on the text-books, as is now commonly the case. Far more important, however, than methods of teaching is the quality and previous preparation of the students who are to be taught, and the qualifications and ability of the teacher and the facilities for work. In regard to the student he thinks that few, if any, teachers in universities requiring a college degree as a preliminary to medical study would be satisfied to go back to teaching high-school students. It is true that the higher entrance requirements shut out some worthy men, but there will always be plenty of schools, he says, that will offer these men as good facilities for work as they can profit by. He believes that arrangements could be made rendering it possible for a student at twenty-one to take his preliminary scientific degree before beginning his medical course.

THE RAINEY-ATKINS TRAGEDY.

A brief description of the causes leading up to the shooting of L. F. Atkins by Dr. James M. Rainey in Chicago is given in the *Journal A. M. A.*, October 1. It appears that Rainey and Atkins had together run a mail-order medicine concern known as the "Dr. Rainey Medicine Company." Frequent quarrels led Rainey to withdraw from the company and open a rival business in the same building under the name "Dr. James M. Rainey, incorporated." The similarity of names caused trouble in the delivery of mail, and Atkins received and cashed a money-order for \$5 which was intended for Rainey. When the return of the money was demanded Rainey was accused of having got the name of the "patient" from Atkins' files; he claimed, however, to have purchased the name from a "letter broker." The dispute led to a quarrel which resulted in

ney shooting Atkins, who died shortly afterward. Rainey, who maintained that he was in self-defense, was exonerated at the coroner's inquest. Various sordid details of "mail-order medicine" business were brought out at the inquest.

RAILROAD TUBERCULOSIS EXHIBIT.

George Homan, St. Louis (*Journal A. M.*, September 24), describes an enterprise carried out by the Missouri Association for Relief and Control of Tuberculosis in the form of a traveling railroad car exhibit sent over the railroad lines in charge of a qualified staff of physicians. A fund was contributed by Mr. Adolphus Busch, of St. Louis, and the cooperation of the St. Louis and San Francisco System, which furnished a first-class day coach for the purpose, was obtained. No charge was made for the car or for hauling and transportation for five persons was deducted, together with other facilities. The St. Louis Municipal Commission on Tuberculosis offered the free use of their valuable framed exhibit, and an advance agent was sent out from five to seven days ahead of the car to prepare the way. The time schedule covered twenty-four days, and stops and demonstrations at thirty-eight towns and cities, but this was extended four days in response to a popular demand. Considering the unique character of the project, it may be considered a marked success. Cordial co-operation of the medical profession at the various points was secured, and the public press was another factor in the success of the enterprise.

SPERMIC TREATMENT OF SYPHILIS.

J. B. Murphy, Chicago (*Journal A. M. A.*, September 24), discusses the treatment of syphilis with the Ehrlich's new preparation "606," and states the results which he has obtained with sodium cacodylate. He asserts that after administration of this sodium salt the spirochetes disappear from the lesions and from the blood somewhat as they are reported to do after administration of Ehrlich's "606,"

and reports briefly one or two cases. He urges physicians throughout the country to try this remedy (concerning which we know something) while waiting for the Ehrlich preparation to be put on the market.

MYOCARDITIS.

H. G. Beck and W. R. Stokes, Baltimore (*Journal A. M. A.*, September 24), report a case of diffuse, purulent, ventriculo-septal myocarditis with Adams-Stokes syndrome in a man aged 67. He had had syphilis thirty-seven years before and had been at one time a hard drinker, though more moderate of late years. His health had been good until seven months before his admission to the hospital, when he began to have vertigo and syncope with epileptiform attacks coming on suddenly and very frequently. Three months after the onset of the attacks a cough developed, with slight expectoration and dyspnea on slight exertion became annoying. He was found dead in his bed six days after his reception. The autopsy details are given in full and microscopic examination showed the bundle of His involved in an acute primary purulent infiltration which the authors think will account for the attacks and symptoms.

THE TREATMENT OF ACUTE STAGE OF POLIO-MYELITIS.

H. M. McClanahan, A.M., M.D., Omaha (*Journal A. M. A.*, October 22), discusses this subject in detail. He says that treatment of the acute stage has received scant consideration. If we can do nothing to modify the disease, certainly we can do something for the patient, and until specific treatment is discovered it is the duty of the physician to institute proper treatment to meet the indications in the average case. Isolation of the patient can do no harm to the individual and may protect others in the family. To my mind it is more important than rigid quarantine. The advice of the family physician is usually accepted, hence if he advises the mother to at once isolate the patient he has adopt-

ed the best measure to prevent the extension of the disease to others. If a mistake in diagnosis is made no harm can possibly result. If during local epidemics of this disease, such as prevailed in 1909 in Nebraska and during 1910 in Iowa, physicians everywhere would adopt this course many cases might be saved from exposure.

The important principle of treatment is elimination. This includes thorough depurative action on the bowels, for which McClanahan recommends castor oil, the ingestion of a liberal amount of fluid to promote excretion from the kidneys, the use of remedies to stimulate diaphoresis, a liquid nourishing diet and proper regulation of the temperature and ventilation of the room.

If the child refuses to drink enough liquid to keep up free elimination from the kidneys, then warm salines by the bowels should be given. To stimulate the skin nothing equals a hot pack. This is also of benefit in the polyneuritic type. If properly applied this is agreeable to the child, and it is always important to have the child's voluntary co-operation. A soft, white blanket, lightly wrung out of hot water (if there is evidence of stupor it should be wrung out of mustard water), is wrapped snugly about the child. A dry blanket should be wrapped over this—not a muslin sheet which absorbs water. The child should be encouraged to drink while in the pack. Some children will drink freely of grape-juice when they will not take water. When removed from the pack they should be gently rubbed dry and placed between blankets until perspiration has ceased.

The diet during the acute stage includes milk, plain, diluted or modified; buttermilk, broths, and, if there is much gas, some of the modified cereals, sometimes a poached egg, toast when properly made and fruit juices. Toast to be easily digested should be made from bread well dried, slices cut thin and heated through.

The fever seldom requires special attention, and when it does sponging or a cool enema most safely meets the indication. Coal-tar derivatives should be avoided entirely. As a routine treatment McClanahan recommends the use of hexamethylenamin (urotropin). It is generally well tolerated by the stomach. Certain types of the disease require special consideration. By the cerebral type is meant cases beginning in a stormy way with fever, delirium or stupor, muscular rigidity, etc. It usually happens that these symptoms subside in two or three days, and if the physician has called it cerebrospinal meningitis he begins to doubt his diagnosis. Lumbar puncture is now recognized as the only positive method of early diagnosis, but is also useful as a therapeutic measure.

In the polyneuritic type, with cutaneous hypersusceptibility, morphin may be required, at least in some cases. Relief can often be attained by the use of a suppository: Powdered opium gr. $\frac{1}{2}$, extract of belladonna gr. $\frac{1}{8}$, sodium salicylate gr. 5; oil of theobroma enough for one suppository. One suppository is to be inserted every three hours until relief is attained. Here again the hot pack, as above described, will sometimes give relief. When the stomach will retain it, sodium salicylate is of benefit.

The mortality in this disease is chiefly from the involvement on the medulla, leading to respiratory failure. I think it is well to remember that this complication will occur in any type of the disease; hence such symptoms as shortness of breath, pallor of the skin with slight cyanosis of the lips, unwillingness to talk and an anxious countenance, should warn the attendant of approaching danger. Oxygen might be of benefit. If McClanahan should again see a case of this type he would do a lumbar puncture, on the theory that the bulbar paralysis might be due to pressure and that the withdrawal of fluid would tend to relieve this pressure.

THE MANUFACTURE OF ANTITOXIN.

the treatment of diphtheria the physician today uses antitoxin as a matter of course. His first expedient and his last resort. He relies implicitly in its efficacy. But does he understand and appreciate all that is involved in the production of that antitoxin—the scientific knowledge, the skill, the caution, the minute detail? This thought is forced upon the writer through the perusal of a recent publication of Parke, Davis & Co., which deals in detail with the subject of antitoxin manufacture. Here is a specimen chapter:

In the selection of the horses which are to be used as the living laboratories for the production of the antitoxin, we apply not commercial knowledge merely, but, what is more important, the point, veterinary skill. The animals must be vigorous and healthy. They are fully examined, their temperature noted several days, and the presence of glanders excluded by the delicate mallein test. It is the blood-serum of these animals that is to be injected into the patient later on, and no precaution can be regarded as extreme which contributes the slightest positive assurance of purity.

Not only must the horses be in good general condition when inoculated; they must be so. They are fed, stalled, groomed and exercised for no other purpose than to maintain to the full their self-protective, antitoxin-producing powers. Thirty miles removed

from the noise, smoke and dust of the city is our stock farm, equipped with model stables and supervised by expert veterinarians. Here at Parkedale, on more than 300 acres of sunny slopes, at an altitude of 600 feet above the level of the Great Lakes, live the horses which we employ in serum-production. Amid these favorable surroundings they maintain the physical condition so essential to satisfactory service as serum-producers.

“These are preliminary considerations. Young, healthy, well-kept horses, indispensable as they are, would be of little use in the elaboration of a reliable antitoxin unless the work of injecting them with toxin were conducted accurately, aseptically, systematically and throughout a period long enough to allow physiological reaction up to the limit of attainable immunization. We have horses enough, so that there is no occasion to be in a hurry with any of them; the exact length of time required for complete reaction is determined in each individual instance by carefully scheduled observations.

“It goes without saying that in the preparation of the toxin and its injection into the horses, as well as in obtaining the blood serum, the most rigid bacteriological technique is maintained. The methods we employ agree substantially with those of Roux, Aronson and Behring, and are from first to last in charge of experts. The varying susceptibility of different animals, whether guineapigs or horses, to

MAXWELL HOUSE...

the Restaurant is the best. Every article on the bill of fare is especially selected, properly prepared by an experienced chef and well served by trained waiters.

SPECIAL—Typical Southern cooking—Beaten Biscuit, Waffles, Cornmeal Muffins, Cinnamon Biscuits and other good things, such as “mother” served.

CLUB BREAKFAST, 6 to 11 a. m. 25c to \$1.00
 TABLE D'HOTE LUNCHEON, 12 to 2 p. m. 50c
 EUROPEAN PLAN Rates, \$1.00 to \$3.50 per day

For thirty years the leading hotel in Nashville will be kept and maintained in the foremost position by its present management.

The location of this Hotel has been one of the important factors in its remarkable success.

J. K. HUME, Mgr.
 NASHVILLE, TENNESSEE.

the diphtheria poison; the more or less rapid physiological reaction; the variation in strength of the antitoxin serum from different horses; the absolute purity of the finished product—these are all important and delicate questions demanding for their determination a high degree of skill and scientific accuracy of observation. These qualifications, in our judgment, outrank all other considerations in

the work of producing a reliable antidiphtheric serum.”

The foregoing has reference to but a single step in the process of serum production, and affords but a hint of the safeguards with which Antidiphtheric Serum (P. D. & Co.) is hedged about at every stage of its manufacture—conditions which enable the company to guarantee the purity and potency of its antitoxin.

PUBLISHERS' DEPARTMENT

Battle & Co., of St. Louis, have just issued No. 13 of their series of charts on Dislocations. This series forms a most valuable and interesting addition to any physician's library.

They will be sent free of charge on application, and back numbers will also be supplied. If you have missed any of these numbers, better write Battle & Co. for them before the supply is exhausted.



